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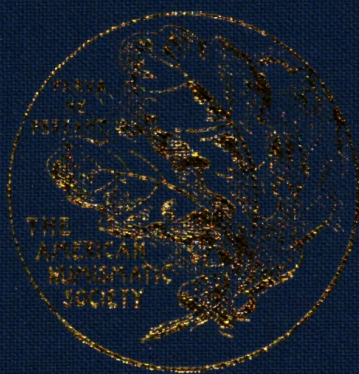
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The Devaluation of Sidonian Silver Coinage in 365 BCE and the First Bronze Issues

PLATES 1–3

ALAIN G. ELAYI,* JEAN-NOËL BARRANDON,**
AND JOSETTE ELAYI***

Analyses of the metallic composition of Sidonian silver and bronze coins dated from the fifth and fourth centuries BCE were conducted by Fast Neutron Activation Analysis (FNAA). The results shed new light on the evolution of silver content and on the devaluation of 365 BCE.

The present analyses using Fast Neutron Activation Analysis were carried out after the recent publication of the corpus of Sidonian coinage,¹ cataloguing some 2,608 coins dated from the Persian period, that is, the fifth and fourth centuries BCE before Alexander's conquest of the Phoenician cities. This corpus not only provides a numismatic study, but also epigraphic, iconographic, technical, metrological, and historical studies. Of primary interest in Sidonian coinage is the yearly dating of the coins from 372 BCE, according to the regnal years of each king. This is the first occurrence of a monetary dating system in antiquity and provides an accurate chronology, one valuable for the history of the Phoenician city of Sidon. One point of special interest in the city's economic history was the devaluation of silver coinage ordered by king 'Abd'aštar I in 365 BCE.²

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1. J. Elayi and A.G. Elayi, *Le monnayage de la cité phénicienne de Sidon à l'époque perse (V^e-IV^e s. av. J.-C.)*, 2 vols., ed. Gabalda (Paris, 2004).

2. For the biography of this king, see J. Elayi, *'Abd'aštar I^{er} / Straton de Sidon : un roi phénicien entre Orient et Occident*, ed. Gabalda (Paris, 2005).

We decided to investigate further the context of and reasons for this devaluation by determining the metallic composition of Sidonian coins. Our intent was to determine if this composition had changed during the Persian domination of the city, in particular during the reigns of Ba'alšillem II and his son 'Abd'aštar I, before and after the devaluation of 365. It was also our aim to determine the percentage of silver in this coinage in order to compare it with the silver content of other monetary silver in use in the Near East at that time. Another purpose of these analyses was to compare the metallic composition of the dated bronze series of 'Abd'aštar I with other undated series, in order to see whether this information could help in classifying them.

Twenty silver and eight bronze representative samples were selected for analysis in order to determine the metallic composition of the coinage and its evolution. Because we were concerned about the authenticity of the analyzed coins given the prevalence of today's good forgeries, we selected them when possible from the oldest collections of the Cabinet des Médailles of the Bibliothèque de France. Only coin no. 6³ was borrowed from a private collection, as this rare coin was not represented in the collections of the Cabinet des Médailles.⁴ All the groups of Sidonian coins are represented by double shekels and sixteenth-shekels. In this coinage, the double shekel represented the stater and the sixteenth-shekel was by far the most frequent fraction. As shown on Table 1,⁵ there is no double shekel representing Group I, dated shortly after 450 BCE, because no such coins have been reported so far and it is unclear that one was issued; we selected instead two rare fractions: one quarter-shekel (no. 2) and one sixteenth-shekel (no. 6). We selected two double shekels (nos. 25 and 27) for Group II, dated from the end of the third quarter of the fifth century, and two double shekels (nos. 210 and 213) and one sixteenth-shekel (no. 380) for Group III (kings Ba'alšillem I, 'Abdamon, and Ba'ana), dating from the last quarter of the fifth century. For Group IV.1, minted by king Ba'alšillem II, who ruled for thirty-six years (401–366 BCE), two double shekels (nos. 586 and 679) and one sixteenth-shekel (no. 861) were selected: coin no. 586 is undated, because this king began dating his coinage only from the thirtieth year of his reign (that is, 372); coin no. 679 is dated from his thirty-fifth year (that is, 367). For

3. We give to the samples the numbers of the catalogue in the corpus (see n. 1, above), where all the references of the coins can be found.

4. We thank the collector for having authorized the analysis of this coin. We would also like to thank Michel Amandry, chief curator of the Cabinet des Médailles, for his valuable help in allowing us to make these analyses by lending the samples.

5. In Tables 1 and 2, from left to right, the first column gives the number of coins in the catalogue of the corpus (see n. 1, above), the second column gives the series of the coins according the classification of the corpus, and the following columns give the percentages of different metals. The order of the coins is chronological, before and after devaluation.

Table 1: Metallic composition of Sidonian silver coins

No.	Series	Cu in %	Ag in %	Pb in %	Au in %	Sn in ppm	Sb in ppm	As in ppm
Before devaluation								
2*	I.1	1	98.2	0.45	0.33	<0.001	<0.0002	<0.01
6*	I.3	1.55	97.6	0.38	0.4	<0.0003	<0.0004	<0.0003
25*	II.1	1.7	97.2	0.84	0.2	<0.0002	<0.0002	<0.0006
27*	II.1	0.63	97.4	1.9	0.055	<0.001	<0.002	<0.01
213	III.1.f	0.51	98.8	0.34	0.35	<0.001	<0.002	<0.01
210*	III.1.f	1.26	97.5	0.94	0.3	<0.0003	<0.0004	<0.0003
380*	III.3.a	2.83	96.1	0.88	0.18	<0.0003	<0.0004	<0.0003
586*	IV.1.1.a	3.4	93	3.18	0.36	<0.0003	<0.0004	<0.0003
861*	IV.1.3.c	6.62	92.3	0.7	0.38	<0.0003	<0.0004	<0.0003
679*	IV.1.1.e	24.7	74.2	0.74	0.25	<0.004	<0.0054	<0.0032
After devaluation								
1236*	IV.2.1.a	0.53	98.6	0.53	0.33	<0.001	<0.002	<0.01
1245*	IV.2.1.c	0.7	98.3	0.67	0.32	<0.0003	<0.0002	<0.001
1405*	IV.2.4.2.d	0.23	98.8	0.59	0.32	<0.0003	<0.0002	<0.0008
1292*	IV.2.1.g	0.51	98.7	0.43	0.32	<0.0003	<0.0004	<0.0003
1534*	IV.3.1.c	0.1	99.5	0.34	0.084	<0.0002	<0.0001	<0.0005
1740	IV.4.2.b	0.93	98	0.51	0.33	<0.12	<0.001	<0.0005
1655	IV.4.1.b	0.78	98.15	0.69	0.25	<0.001	<0.0005	<0.0003
1789*	IV.5.1.a	0.77	98.2	0.58	0.38	<0.0003	<0.0004	<0.0003
1931	IV.6.1.a	0.43	99.2	0.24	0.16	<0.002	<0.0004	<0.01
2023*	IV.6.2.b	0.84	97.9	1	0.14	<0.002	<0.0004	<0.01

* = Illustrated

Group IV.2, minted by king 'Abd'aštar I, who ruled for fifteen years (365–352), we have selected three shekels (nos. 1236, 1245, and 1292) dated respectively from 365 (year 1), 363 (year 3), and 359 (year 7), and one sixteenth (no. 1405) dated from 361 (year 5). We thus analyzed the last available coins before the devaluation (367 BCE) and the first ones after devaluation (365 BCE). For Group IV.3, minted during the short reign of king Tennes (351–347), we selected one double shekel (no. 1534) dated from 349 (year 3); for Group IV.4, minted by king Evagoras (346–343), one double shekel (no. 1655) and one sixteenth (no. 1740), dated respectively from 345 (year 2) and 346 (year 1); and for Group IV.5, minted by the last king 'Abd'aštar II (342–333), one double shekel (no. 1789) dated from 342 (year 1). For the coinage minted by the Persian official Mazday/Mazaios (353–333), we have selected one double shekel (no. 1931) and one sixteenth (no. 2023), both dated from 353 (year 1). As far as bronze coins are concerned, we have selected four sixteenth-shekels (nos. 1470, 1483, 1494, 1509) dated respectively from 355 and 354 (years 11 and 12) for Group IV.2 ('Abd'aštar I), and two half-shekels (nos. 2321 and 2384), one quarter (no. 2511), and one sixteenth (no. 2601) for the unclassified bronze fractions.

The analyses were made by Fast Neutron Activation Analysis in the Centre Ernest Babelon, IRAMAT, CNRS, at Orléans, using a cyclotron with variable energy for the CERI. This method is nondestructive and performs a bulk analysis.⁶ The detection limit is approximately at the 1 ppm level (10^{-6} g/g). After an initial series of analyses of sixteen coins, the results seemed to be significant; however, we decided to analyze a second series of twelve different coins in order to confirm the results already obtained. We present separately the results obtained for the silver and bronze coins.

The results of the analyses of the twenty silver coins, cleaned before or after entering the collections of the Cabinet des Médailles, are presented in Table 1. We observe that the trace elements (Sn, Sb, and As) do not offer any interesting correlation; this is the same for Au. The percentage of Pb in coin no. 27 (1.9%) and in coin no. 586 (3.2%) is significantly different from the average of other coins of the same series. Coin no. 25, which belongs to the same series as coin no. 27, is only 0.84% Pb; coins no. 861 and 679, which belong to the same series of king Ba'alšillem II as coin no. 586, are respectively 0.7% and 0.74% Pb. This difference in lead percentage is difficult to interpret and could be, for example, related to a less efficient cupellation. One must also keep in mind the possibility of remelting old coins, which can markedly affect coin composition.

6. For the method used, see J.-N. Barrandon, "Détermination des titres des monnaies d'argent par analyse par activation au moyen de neutrons rapides," *Revue d'Archéométrie* 8 (1984): 61–69.

The results concerning Ag and Cu, on the other hand, are highly significant. Considering the whole Sidonian coinage of the Persian period, we can see that the concentration of silver strongly decreases at the end of Ba'alšillem II's reign, from approximately 98% silver and 1% copper at the beginning of the coinage to 92% and ultimately to 74.2% silver and 24.7% copper by 367 BCE (year 35 of Ba'alšillem II's reign). This strong decrease in the silver content together with the increase of copper causes a yellowish coloration of the coins. No doubt this change was noticed by the users of Sidonian coins, which could have produced a crisis of confidence in them. In the classification of different categories of silver in contemporary Mesopotamia, only silver having a purity of more than 90% (Akkadian *murūqu*, "best quality") was used for jewelry. Alloys containing between 80% and 90% (*pesu*, "white") silver were used for trade and payments. Less than 80% (*la petqu*, "unrefined") was considered unsuitable for trade, which corresponds to our coin no. 679.⁷

Two years later, in 365, 'Abd'aštart I, Ba'alšillem II's son, succeeded his father to the throne of Sidon, inheriting this possible crisis of confidence. This was a problem with internal and external consequences. The users of Sidonian coins were not only the inhabitants of Sidon, using coinage inside the territory of their city in a context of monetary economy. There were also people outside the city of Sidon who bought silver Sidonian coins solely for their metallic value. Sidon was exporting her silver double shekels as far as Cilicia, Egypt, Mesopotamia, Iran, and Afghanistan.⁸ In such use, these coins presented the advantages of a relatively large size (25–28 g) and a high silver content guaranteed by the symbols of a famous and powerful Phoenician city. That is why it was vital for Sidon to keep intact this image both inside the territory, for the confidence of the population, and outside, for the continuation of the metal trade.

This was not an easy task, as the city of Sidon was overwhelmed at the time by many difficulties.⁹ The military fleet was built, repaired, and equipped by the Sidonians and was under the command of the king of Sidon. Because this city belonged to the Persian empire, her fleet provided the main support to the Persian fleet and was ultimately under the control of the king of Persia. Ba'alšillem II's reign lasted thirty-six years, from 401 to 366 BCE. From 385 onward he faced serious demands on his treasury due to his obligatory participation in the wars waged by the Persians, such as the first Persian campaign against Egypt c. 385–383,

7. Cf. F. Joannès, "Métaux précieux et moyens de paiement en Babylonie achéménide et hellénistique," *Transeuphratène* 8 (1994): 137–144.

8. Cf. J. Elayi and A. G. Elayi, *Trésors de monnaies phéniciennes et circulation monétaire (V^e-IV^e s. avant J.-C.)* (Paris, 1993), 356–359, figs. 23–24.

9. For the detail of Sidonian difficulties, cf. Elayi and Elayi, *Le monnayage de la cité phénicienne*, 635–650.

which was a failure; the naval victory against Kition of Cyprus c. 383/381; and the second campaign against Egypt in 373, which was a failure as well. Moreover, after 369, the situation in the western part of the Persian Empire was troubled, due to the first revolts of the satraps (Datames and Ariobarzanes). For Sidon, this meant that the city had to prepare, repair, and rebuild her fleet according to the fortunes of the Persian campaigns and to welcome in her small territory Persian troops preparing for future campaigns. No doubt these heavy financial obligations explain the decrease of the silver content in their coins. When 'Abd'aštar I took the throne in 365, the situation was still deteriorating, and he had to find a solution for recovering confidence in his currency, taking into account the financial difficulties of his city. This king had extensive logistical experience, having been associated in the government of his father for many years. He also had a strong personality and undertook during his fifteen-year reign several initiatives in policy, economy, and artistic development.¹⁰

During the first year of his reign in 365 BCE, 'Abd'aštar I's brilliant idea was to increase the silver content while at the same time devaluing the Sidonian coins by decreasing their weight.¹¹ The second measure compensated to some extent for the first one, provided that we exclude coin no. 679, minted at the end of his father's reign, for which the copper content increases to 25%. From the first year of his reign until the end of the Persian period, the previous silver content of about 98.5% was reestablished, which no doubt also reestablished the confidence of the users of Sidonian coinage. Before the devaluation, the last two analyzed coins (nos. 586 and 861, excluding coin no. 679) have a silver content of about 92.6% for a weight of 28 g, resulting in about 26 g of silver for the double shekel. The weight of the coins after devaluation is about 25.35 g with a silver content of about 98.5%, resulting in about 25 g of silver for the double shekel.

The new monetary policy inaugurated by 'Abd'aštar I was maintained by the following kings until the end of the Persian period and Alexander's arrival in 333. This policy was also followed by the Persian official Mazday, in charge of Sidon from 353 to 333, and whose issues parallel the civic Sidonian coinage.¹² Several elements suggest that both Mazday's coins and the Sidonian civic coins were minted in the same Sidonian workshop: the similarity of their metallic composition supports this theory.

The results of the analyses of eight bronze coins are presented in Table 2. We have tried to show in our Sidonian corpus that the bronze coinage was inaugurated

10. Cf. Elayi, 'Abd'aštar I^{er} / Straton de Sidon.

11. Cf. Elayi and Elayi, *Le monnayage de la cité phénicienne*, 586–589.

12. Cf. J. Elayi and A.G. Elayi, "Le monnayage sidonien de Mazday," *Transeuphratène* 27 (2004): 155–162.

Table 2: Metallic composition of Sidonian bronze coins

No.	Series	Cu in %	Ag in %	Pb in %	Au in %	Sn in %	Sb in ppm	As in ppm	Fe in %	Ni in %	Co in %
Dated series											
1470*	IV.2.7.b	90.9	0.011	0.037	0.0024	8.89	0.028	0.12		0.018	
1483*	IV.2.7.c	90.3	0.01	0.037	0.0034	9.38	0.024	0.17		0.02	
1484	IV.2.7.c	90.9	0.02	0.012	0.0033	8.59	0.02	0.07	0.3	0.018	0.04
1509*	IV.2.8.d	90.3	0.0079	0.06	0.0012	9.06	0.014	0.095	0.4	0.023	
Unattributed series											
2321*	IV.7.6.1.a	92.7	0.031	0.44	0.0033	6.3	0.038	0.13	0.3	0.02	
2384*	IV.7.6.1.f	91.3	0.018	0.01	0.003	8.24	0.018	0.07	0.3	0.018	0.04
2511*	IV.7.7.d	90.2	0.016	0.15	0.0022	8.94	0.033	0.13	0.29	0.015	
2601*	IV.7.9.a	85.9	0.061	2.95	0.005	10.8	0.032	0.16		0.08	

* = Illustrated

to replace the smallest silver coins, which were difficult to handle because of their size. The bronze half shekel probably replaced the silver $1/32$ of a shekel (weighing about 0.34 g), which was no longer minted.¹³ For coins nos. 1470, 1483, 1494, and 1509, dated to 355 and 354 BCE (years 11 and 12 of 'Abd'aštart I), the compositions are similar. This was foreseeable since the four sixteenth-shekels selected as samples belong to the second and third issue of 'Abd'aštart I, who inaugurated bronze coinage in 356 (year 10 of his reign). The remaining bronze group of four coins is later than the bronze series of 'Abd'aštart I and dates from the period of Tennes, Evagoras, and 'Abd'aštart II. This was the same period as the simultaneously minted coinage of the Persian official Mazday (between 351 and 333 BCE). There were insufficient data to attribute them to a particular rule inside this period.¹⁴ The metallic compositions of this group are scattered. Two coins (nos. 2384 and 2511) have a metallic composition similar to the previous dated series, while coin no. 2321 contains more copper and less tin and coin no. 2601 less copper and more tin. Lead also rises to 0.4% in coin no. 2321 (which could be insignificant) and to 3% in coin no. 2601 (which surely is significant). Whether this difference in composition could be a criterion for the selection of subgroups in the bronze coinage or not can only be determined if additional analyses are made.

The analyses of the metallic composition of Sidonian coins in the Persian period shed new light on the evolution of the coins' silver content and on the devaluation by 'Abd'aštart I in 365 BCE. Together with our earlier conclusions concerning the astonishing metrological precision of Sidonian coiners,¹⁵ this study shows to what extent they mastered the fabrication of coins, both in the control of their metallic composition and in their metrological precision.

13. Cf. Elayi and Elayi, *Le monnayage de la cité phénicienne*, 589–591.

14. Cf. *ibid.*, 430–435.

15. Cf. *ibid.*, 591–592.

The Stymphalos Hoard of 1999 and the City's Defenses

PLATES 4–5

ROBERT WEIR*

This article presents coin finds, including a silver and bronze circulation hoard, from the Canadian excavations at the Arkadian city of Stymphalos in the Peloponnese, presenting also evidence for their economic contextualization in the military events of the late fourth and third centuries BC.

In the course of Canadian excavations at the Arkadian city of Stymphalos in 1999, there came to light in the foundations of an artillery tower a small hoard of six silver and eight bronze coins that has ramifications both for the history of that site and the chronology of other Peloponnesian coinages.¹ Other coin finds from the city fortifications complement the hoard and suggest that the defenses of Stymphalos fell from use soon after their renovation in the early third century BC. Because Stymphalos is a city almost without a history, any light that excavation coins can shed is welcome indeed.

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1. This article is a revised and expanded version of papers I gave at the annual meetings of the Classical Association of Canada in Fredericton, NB (May 2003) and of the Archaeological Institute of America in San Francisco (January 2004) and has benefited along the way from the helpful comments of John Mac Isaac, Robert Knapp, and two anonymous referees. I acknowledge gratefully the support of the Social Sciences and Humanities Research Council of Canada for a three-year grant (2001–2004) to study the coins excavated by Canadian teams at Stymphalos and Mytilene. Some of this money funded my student assistants in 2003 (Monika Urbanski) and 2004 (Matt Malott), and the University of Windsor was generous enough to fund a work-study student in 2004–2005 (Melissa Bradley). The efforts of all three students have ameliorated this paper.

CATALOGUE OF THE HOARD

All catalogue numbers contain a Roman numeral followed by a hyphen and an Arabic numeral. The Roman numeral corresponds to the excavators' designation of the discrete area where the coin was found (see the list below). The Arabic numeral refers to the relative position of the coin among the numismatic finds from the same area, as determined by the sequence traditional to the discipline. Because the coins found at Stymphalos will not be published together, this system gives some consistency between publications and avoids the potential confusion of purely Arabic catalogue numbers. The excavation areas included in this article are:

- IV: the Acropolis Tower, a large artillery tower located at the city's highest point, namely the southwest corner of its triangular circuit.
- V: the West Wall Tower, another large artillery located north of IV, about midway along the city's west wall.
- VI: a 50m stretch of city wall about midway between IV and V.
- VIII: the Phlious Gate, a small entrance near the southeast corner of the circuit.
- XIII: the Pheneos Gate, another entrance, located near the southeast corner of the city circuit.

Under the rubric of "Wear" appears a personal assessment of the amount of circulation that a coin saw before going to ground, to the extent that subsequent corrosion permits a determination.² Stratigraphic data is included for each coin, according to the format used by the excavators.³

Wherever possible, there are multiple references for each coin, because not all readers will have access to all works. In such a list, the first work to be cited is the preferred reference, either because it is the most recent, most authoritative, or both.

MACEDONIA: KASSANDER AS KING (1)

Date: 305–297 BC

Cat.: V-1 *Denom.:* tetrachalkon; *Metal & Size:* Æ 21; *Weight:* 5.7; *Die-Axis:* ?; *Wear:* heavy; *Stratigraphy:* Tr 99.3, L 6, P 11, SF 20B, 27/07/99; *Cat.:* 2381

2. Greek bronzes, the small change of their day, circulated more heavily, and thus wore out more quickly, than precious-metal coins, though more or less precise quantification of the rate of wear by analogy with modern series has proved problematic (Mac Isaac 1995).

3. Tr = trench, L = level, P = pail, and SF = small find; Cat. = excavation catalogue. Trench numbers are often included on site plans and denote the years in which they were dug. For instance, trench 96.1 was the first trench opened in 1996, and trench 00.96.1 would be a year 2000 continuation of excavation in that same trench.

Obverse: head of beardless Herakles right, wearing lion's skin

Reverse: jockey on horse stepping to right (traces); no lettering visible

Reference: SNG Cop. Thessaly #1140–1150

Notes: found bonded to V-4

MACEDONIA: DEMETRIOS POLIORKETES (5)

Date: c. 300–295 BC⁴

Cat.: V-2 *Denom.:* dichalkon; *Metal & Size:* Æ 16; *Weight:* 4.1; *Die-Axis:* 6; *Wear:* moderate–heavy; *Stratigraphy:* as V-1, SF 16; *Cat.:* 2375

Obverse: head of Demetrios(?) in crested Corinthian helmet to right

Reverse: prow of galley to right; BA above; indistinct lettering below

Reference: likely Newell 1926: 25, #20 (Salamis, Cyprus, c. 300–295 BC); or 48, #34 or 50, #40 (Tarsos, Cilicia, c. 298–295 BC); or 151–152, #172–174 (uncertain Asia Minor mint, before 294 BC)

Cat.: V-3 *Denom.:* as V-2; *Metal & Size:* Æ 16; *Weight:* 3.3; *Die-Axis:* 12; *Wear:* moderate–heavy; *Stratigraphy:* as V-1, SF 18A; *Cat.:* 2377

Obverse: as V-2

Reverse: as V-2

Reference: as V-2

Notes: found bonded to V-7

Cat.: V-4 *Denom.:* as V-2; *Metal & Size:* Æ 15; *Weight:* 4.0; *Die-Axis:* 12; *Wear:* heavy; *Stratigraphy:* as V-1, SF 20A; *Cat.:* 2380

Obverse: as V-2

Reverse: as V-2

Reference: as V-2

Notes: found bonded to V-1

Cat.: V-5 *Denom.:* as V-2; *Metal & Size:* Æ 15; *Weight:* 3.8; *Die-Axis:* 9; *Wear:* heavy; *Stratigraphy:* as V-1, SF 23A; *Cat.:* 2384

Obverse: as V-2

Reverse: as V-2, but A below

Reference: Newell 1926: 149–150, #162–164 (Caria[?], before 294 BC)

Notes: found bonded to V-6

4. Although Demetrios had styled himself *basileus* since 305 BC, this catalogue follows Newell (1926) and Mørkholm (1991, 78) in attributing the helmeted head/ship's prow bronzes to the years leading up to his seizure of the Macedonian throne in 294 BC.

Cat.: V-6 *Denom.:* as V-2; *Metal & Size:* Æ 15; *Weight:* 3.9; *Die-Axis:* 1; *Wear:* heavy; *Stratigraphy:* as V-1, SF 23B; *Cat.:* 2385

Obverse: as V-2

Reverse: as V-2

Reference: as V-2

Notes: found bonded to V-5

BOIOTIA: FEDERAL COINAGE (2)

Date: c. 304–294 BC

Cat.: V-7 *Denom.:* drachm; *Metal & Size:* AR 16; *Weight:* 5.7; *Die-Axis:* 6 or 12; *Wear:* slight; *Stratigraphy:* as V-1, SF 18B; *Cat.:* 2378

Obverse: Boiotian shield

Reverse: amphora within incuse square, Λ - Ω flanking

Reference: *BCD Boiotia*, #62 (same obverse die) and #63; *SNG Sweden I* #325 (uncertain mint, late fifth to early fourth c. BC); sim. *BMC Centr.*, “Uncertain Mints” #28 (hemidrachm, circa 387–374 BC); sim. *Agrinion* #123 (hemidrachm); sim. *SNG Cop. Thessaly* 413 (Δ - Ι: uncertain mint, circa fifth century BC); sim. *SNG Lockett* #1775–1776 (Δ - Ι: perhaps Theban, no date)

Notes: found bonded to V-3

Cat.: V-8 *Denom.:* hemidrachm; *Metal & Size:* AR 16; *Weight:* 2.8; *Die-Axis:* 3 or 9; *Wear:* slight; *Stratigraphy:* as V-1, SF 24; *Cat.:* 2386

Obverse: Boiotian shield

Reverse: amphora; [Θ?] – Ε in upper corners; all within incuse square

Reference: sim. *BCD Boiotia*, #64–65 (no lettering visible); sim. *SNG Cop. Thessaly* #262 (no lettering); sim. *SNG Sweden I* #326–327 (uncertain mint, late fifth to early fourth c. BC); sim. *BMC Centr.*, “Uncertain Mints” #20–22 (c. 387–374 BC); cf. *SNG Lewis* #646 (stater with same lettering, early fourth c. BC)

Notes: apparently an unpublished variety

ARKADIA: PHENEOS (2)

Date: c. 300 BC

Cat.: V-10 *Denom.:* dichalkon; *Metal & Size:* Æ 15; *Weight:* 2.1; *Die-Axis:* 4; *Wear:* slight; *Stratigraphy:* as V-1, SF 15; *Cat.:* 2374

Obverse: head of Hermes to right, wearing petasos

Reverse: ØE above ram standing to right

Reference: *SNG Cop. Thessaly* #272 (c. 421–362 BC); *BMC Pelop.* #9–12 (c. 431–370 BC)

Cat.: V-11 *Denom.:* as V-10; *Metal & Size:* Æ 14; *Weight:* 2.8; *Die-Axis:* 2; *Wear:* slight; *Stratigraphy:* as V-1, SF 17; *Cat.:* 2376

Obverse: as V-10

Reverse: as V-10

Reference: as V-10

PHLIASIA: PHLIOS (1)

Date: mid-fourth century BC

Cat.: V-12 *Denom.:* trihemionbol; *Metal & Size:* AR 12; *Weight:* 1.2; *Die-Axis:* 6; *Wear:* moderate; *Stratigraphy:* as V-1, SF 25; *Cat.:* 2387

Obverse: bull butting to left; I above

Reverse: wheel, with Φ, Π, and two bunches of grapes between the four spokes; omphalos at center⁵

Reference: *BCD Pel.* #121; *SNG Cop. Thessaly* #14; *McClean*, #6222, pl. 218.19; *Weber Coll.* #3885; sim. *BMC Pelop.* #24.

SIKYONIA: SIKYON (2)

Date: c. 330/320s–c. 280s BC

Cat.: V-14 *Denom.:* hemidrachm; *Metal & Size:* AR 18; *Weight:* 2.7; *Die-Axis:* 9; *Wear:* slight; *Stratigraphy:* as V-1, SF 19; *Cat.:* 2379

Obverse: Chimaera standing to left; ΣI below

Reverse: dove flying to left; I in front and O or D above tail

Reference: sim. *BMC Pelop.* #117–118

Cat.: V-15 *Denom.:* hemidrachm; *Metal & Size:* AR 16; *Weight:* 2.7; *Die-Axis:* 12; *Wear:* slight; *Stratigraphy:* as V-1, SF 21; *Cat.:* 2382

Obverse: as V-14

Reverse: as V-14, but NO above tail

Reference: *BMC Pelop.* #118

Notes: obverse struck from worn die; on the reverse, the same NO signature appears on posthumous Alexander tetradrachms minted at Sikyon c. 300–290 BC (Price 1991, #708)

5. Paus. 2.13.7 reports an omphalos, the reputed center of the Peloponnese, on display in Phlios.

ELIS: OLYMPIA (1)

Date: c. 352–348 BC⁶

Cat.: V-16 *Denom.:* hemidrachm; *Metal & Size:* AR 15; *Weight:* 2.6; *Die-Axis:* 6; *Wear:* moderate-heavy; *Stratigraphy:* as V-1, SF 22; *Cat.:* 2383

Obverse: laureate head of Zeus to right, his wreath composed of large bay leaves

Reverse: F – A flanking eagle standing to right with closed wings; olive leaf to right

Reference: Leu Numismatics 90, May 10, 2004, lot 334.8 (c. 352–348 BC); *Winterthur* #2169 (c. 360–330 BC); *Dewing Coll.* #1896; *SNG Cop.* #420 (both c. 323–271 BC after Seltman 1921, pl. VIII.30); sim. *BMC Pelop.* #85 (olive leaf above eagle)

INTERPRETATION OF THE 1999 HOARD

A student volunteer discovered the STYM V Hoard before this writer's eyes while beginning a new pass deep in the foundations of the artillery tower on July 27, 1999. No trace of any container was found: at the moment of discovery, the coins were simply nested in a shallow lens of soft, dark soil that was quite distinct from the hard-packed fill of the rest of the stratum. Some sort of organic container, most likely a purse of leather or cloth, had apparently contained the coins. There was no intrusion in the stratigraphy above to suggest that the purse had been buried deliberately in the foundations of the tower at some later point; nor would concealment underneath a functioning tower have been conducive to convenient recovery, had the coins' burial been premeditated. Furthermore, both the composition of the hoard (a mixture of low-denomination silver and token-value bronzes) and its relatively low total value (under four Aeginetan *drachmai*) argue against its having been someone's long-term savings. Given the circumstances, our hoard was surely the contents of someone's purse on the day that it was accidentally mislaid in the construction fill of the new artillery tower. As for the possibility of a foundation deposit, the available evidence in no way supports such an interpretation.⁷

6. The Swiss auction house Leu Numismatics undertook a thorough overhaul and update of Seltman (1921) to accompany its 2004 sale of over three hundred Olympia coins from the BCD Collection. The fully illustrated and heavily annotated auction catalogue is a true work of scholarship, so it is fortunate that its contents are readily available on the Coin Archives website (<http://www.coinarchives.com/a/>). The Leu chronology for this coin receives support from the Stymphalos 1999 hoard.

7. I am grateful to an anonymous *AJN* fact-checker for raising this intriguing possibility and pointing me toward Weikart (2002). Weikart opens his chapter on coins as foundation deposits ("Exkurs: Münzen als Bauopfer?") with the verdict that not one of the ten hoards

Whereas silver coins of Boiotia, Sikyon, and Elis/Olympia were common fare in Peloponnesian hoards around 300 BC, bronzes of Stymphalos's neighbors to the east (Phlious) and to the west (Pheneos) are very seldom encountered in such contexts. Not only were bronzes not the preferred medium for hoarding, but Phlious and Pheneos were both minor emitters.⁸ The unusual nature of the hoard is further compounded by the presence of six regal bronzes with a Macedonian connection, one of Kassander as *basileus* (305–297 BC) and five in the name of Demetrios Poliorketes (c. 300–295 BC). It is convenient that the regal bronzes are closely datable, but their appearance makes an already unusual hoard unique. The high proportion of these bronzes suggests that the hoard was deposited at about the same time that they were being minted and were especially common.⁹ Given the quantity of accretions obscuring the surfaces of each of the Demetrios bronzes, any estimate of period of circulation based on wear is at best impressionistic. Of some significance for the hoard's lower terminus is the absence of bronzes of Pyrrhos (as king of Macedonia, 287–282 BC) or of Antigonos Gonatas (277–239 BC), even though such coins were recovered from nearby Nemea in numbers comparable to pieces of Demetrios.¹⁰ On purely numismatic grounds, a date around 290 BC thus suggests itself for the deposit of the hoard and construction of the STYM

produced as candidates for this interpretation can withstand scrutiny (133: "In diesen Kapitel soll gezeigt werden, daß es für diese Annahme keinerlei beweiskräftige Argumente gibt."). The Stymphalos hoard does not match the typical profile of the ten candidates either (133–141): nine of them were buried in holy ground, either under a temple or in a *temenos* (the only hoard from a secular context was a cache of seven bronzes of Hieron in the wall of the *bouleuterion* of Morgantina); seven of them were scatters of coins across a level, as if construction activity had disturbed an earlier burial, or were found in pots; and four of them contained other objects besides coins.

8. Only eight Pheneos bronzes were found among the 2,117 Greek coins excavated at the relatively nearby pan-Hellenic sanctuary of Nemea (Knapp and Mac Isaac 2005, #1954–1961, all dated between c. 431 and c. 300 BC, though only because these are the dates provided in *BMC Pelop.*, 193–195). The absence, however, of Stymphalos's own coins from the group is not surprising: they were always rare, and they account for only five of the 492 coins excavated there.

9. Old bronze coins can be found in hoards closed up to two centuries later, but their frequency naturally dwindles with age. For instance, IGCH #116 and #118 are hoards of bronze coins, buried in Thessaly c. 300 BC, that are half composed of coins of Kassander as king (305–297 BC). Two small bronze hoards dating from mid-Hellenistic Locris and Aetolia consist of about 20% Demetrios Poliorketes coins, although they occur alongside even older pieces of Alexander III and Philip II (IGCH #208, 238). A more tenuous representation is a single Demetrios Poliorketes bronze in an Attic hoard of 342 bronzes that was buried around 86 BC (IGCH #342).

10. Knapp and Mac Isaac (2005): Demetrios Poliorketes (#83–98, 16 coins); Pyrrhos (#136–144, 9 coins); Antigonos Gonatas (#99–114, 16 coins).

V artillery tower. This date is consistent with repair and upgrade of Stymphalian fortifications proposed by the excavators at some point after Kassander's general Apollonides captured the city from Polyperchon in 315 BC.¹¹ Missiles from Apollonides' attack and traces of the harm it caused have been discovered elsewhere in Stymphalos,¹² and it is therefore likely that the original, fourth-century phase of the western defenses, which were vulnerably located on flat ground, also suffered damage in 315 BC.¹³ As the discussion below of other, nonhoard coins from the Stymphalian defenses will suggest, the city circuit was still unended when Demetrios visited the region in 294 BC.

Macedonian bronzes, particularly of Demetrios Poliorketes, are scarce in the Peloponnese, but stray examples have typically come from military contexts.¹⁴ Sixteen Demetrios bronzes were excavated at Nemea, but they account for only about 0.5% of all the Greek coins found there, whereas the proportion for Stymphalos is much higher (4%).¹⁵ The Macedonian monarchy took an active interest in the Nemean Games in the late fourth century; Kassander presided over the festival of 315 BC and Demetrios held meetings of the League of Corinth there in 311 and 303 BC.¹⁶ The late fourth century was also the acme of Nemea's prosperity, since most of the structures one sees there today date to this time, and it is generally believed that Macedonian kings were largely responsible for the boom.¹⁷ If royal interactions such as these did not translate into a lot of Macedonian coins lost at Nemea in the late 300s BC, one may suppose that the much higher proportion of Macedonian coins at Stymphalos was the result of a garrison.¹⁸ In the case of

11. Diod. 19.63.1. Williams (2002, 155) (STYM IV), 157 (STYM V), 160 (STYM VI), 168 (STYM VIII). The Pheneos Gate (STYM XIII), which this writer and his University of Victoria students excavated in 2001, was also built at about the same time.

12. Over 150 iron projectile points were found within the Athena sanctuary (STYM II) near the summit of the acropolis (Williams 2002, 152–153) and the STYM VI feature on the city's western defenses may be the repair of a breach in the original wall (Williams 2002, 180).

13. Williams and Gourley (2005, 249–257).

14. Newell (1926, 157); Tarn (1913, 66–67).

15. Knapp and Mac Isaac (2005, #83–88 [shield with monogram/helmet], 89–98 [helmeted head/prow]). The 109 coins of Macedonian kings from Philip II through Antigonos Gonatas actually account for 6% of the Nemean finds, but the majority are of Philip II (51) and Alexander III (21), which is taken as evidence for their patronage of the sanctuary and its festival (see note 17 below). The twenty helmeted head/prow coins of Demetrios Poliorketes unearthed at Stymphalos come from all parts of the city, though the 1999 hoard of course accounts for a quarter of them.

16. Kassander: Diod. 19.64.1. Demetrios: IG IV² 1.68, l. 73. I owe these references to Knapp and Mac Isaac (2005, n. 43).

17. Miller (1990, 23, 57, 66); Knapp and Mac Isaac (2005, 14–15).

18. Compare the proportions of Macedonian regal bronzes excavated in the known garrison towns of Athens (1.6%; *Agora*, 166) and Corinth (3%; Zervos 1986).

Stymphalos, we may have evidence for the presence of Antigonid forces, perhaps to rebuild the town's fortifications and garrison the town, but surely posted there to counter the threat from Sparta.¹⁹ Demetrios Poliorketes had had strategic interests in the region a decade before the Stymphalos hoard was deposited. In 303 BC, he was able to capitalize on Athenian support to expand his interests in mainland Greece, an expansion that included the capture of both Corinth and Sikyon and the resettling of the latter farther inland under the name of Demetrias. That same year, he extended his influence into the Stymphalos region as part of his self-styled liberation of Achaia, Argos, and Arkadia as far south as Mantinea.²⁰ At about the same time (303–301 BC), Stymphalos also moved closer within the orbit of Demetrios/Sikyon with the conclusion of a commercial treaty between the two cities.²¹ We know that Demetrios kept a strong hold on Arkadia partly to contain the threat of Sparta, which in fact made trouble for him in 293 by inducing a freshly subjugated Thebes to revolt.²² Even Antigonid policy after Demetrios, at least until it was challenged by the Achaean League's growing power in the years after 250 BC, required comprehensive control of the cities of the Peloponnese, whether that took the form of garrisons or pro-Macedonian tyrannies. In such a climate, Stymphalos would have been a strategically desirable stronghold, given its location on a major natural route from Lakonia and the central Peloponnese to the Corinthian Gulf near Sikyon. Interestingly enough, the same variety of Demetrios bronze as V-2 through V-6 is commonly encountered both at Stymphalos and elsewhere in Arkadia (Orchomenos and Tripolis), though Newell long ago attributed them to a mint in southwest Asia Minor.²³ Arkadia was not only heavily garrisoned by Demetrios's forces in the 290s, but these soldiers seem likely, from the coins they

19. Apollonides, Kassander's general, besieged and captured Stymphalos from Polyperchon in 315 BC (Diod. 19.63.1). Philip V would return to the valley in 219 BC to retake it from the Aitolian commander Euripidas (Polyb. 4.67–69).

20. Sikyon: Diod. 20.102.1–4; Strabo 8.382e; Plut. *Demetr.* 25.3; Paus. 2.7.1; Polyain. *Strat.* 4.7.3. Capture of the northern Peloponnese: Diod. 20.103.1–7; Plut. *Demetr.* 25.1–2; Polyain. *Strat.* 4.7.8; Ath. 10.415a.

21. Taeuber (1982, 182–183 = SEG XXXI.351).

22. Plut. *Demetr.* 39.2–5; Polyain. *Strat.* 4.7.3 (cf. Tarn 1913, 66–67). Demetrios's capture of Thessaly and Boiotia (Plut. *Demetr.* 39.1–2) and his foundation of Demetrias (Strabo 9.436b–c) that same year may have prompted a nervous Sparta to intervene at Thebes.

23. Newell (1926, 156–157). Whereas the Stymphalian examples are too heavily encrusted to allow extensive discussion of stylistic details, the size, weight, die orientation, and what can be made of the portrait style all indicate that our examples are consistent with those found elsewhere in Arkadia that Newell grudgingly attributed to a mint in southwest Asia Minor. In the light of this hoard—not to mention other newly recorded finds at Nemea and Stymphalos—one should seriously consider an Arkadian mint for them, especially since Demetrios placed garrisons in Arkadia in the 290s. See below for further discussion of the circumstances of the hoard's deposit in the context of other coins from the city fortifications.

left behind, to have been recruits from his power base in southwest Asia Minor.²⁴

The Macedonian bronzes are useful for confirming the dates of the hoard's other coins. Their presence alongside some little-worn hemidrachms of Sikyon corroborates Jennifer Warren's chronology for these Sikyonian silvers.²⁵ The rare issues of Pheneos have never been the subject of study, but given the fresh state of both Pheneos bronzes in the 1999 hoard, one can be sure at least that they were being minted in the early third century BC, even if the precise *termini* of emission are still unknown. The Phliasian trihemiobol exhibits a degree of wear comparable to that of the hemidrachm of Elis/Olympia, which supports a date for both pieces in the middle of the fourth century BC.

The Boiotian coins are doubly distinctive: both pieces are examples of rare varieties, and Boiotian silver of any kind is seldom encountered in the region. The Athenian Agora yielded no Boiotian silver at all,²⁶ and of Nemea's 2,117 Greek coins there is but one Theban coin of the fifth–fourth century shield/amphora variety.²⁷ The two pieces in the hoard are, with the exception of a late third-century drachm, the only Boiotian coins among the 492 excavated at Stymphalos. Whatever brought them into the hoard was not random traffic. The most cogent reason for their appearance at Stymphalos is that Demetrios Poliorketes had recently minted them in the years following his liberation of Thebes (304 BC) and that he, as will be argued below, was responsible for the reconstruction of the Stymphalian fortifications in whose foundations this hoard was found.²⁸ Boiotian coins, although never common in the Peloponnese, are encountered there most frequently in hoards deposited between 371 and c. 300 BC.²⁹ Late fourth-century hoards with Boiotian material tend to be located in or near Arkadia, which may reflect Arkadian mer-

24. In commenting on the nearly identical obverse iconography of contemporary issues by Tegea and Mantinea, Newell pointed out that these cities "apparently found it to their advantage to imitate more or less closely the coins commonly in circulation among the troops of occupation" (1926, 158).

25. Warren (2000, 208).

26. *Agora* (204–208).

27. Knapp and Mac Isaac (2005, #220).

28. The Talanta hoard of 1948 from southern Laconia contained several Boiotian drachms similar to, though somewhat more worn than, V-7 and was buried circa 280 BC (*CH* III, 31 = *IGCH* #132), which would place their minting around 300 BC. I gratefully owe this information to the anonymous coauthor of the auction catalogue *BCD Boiotia* who also, and independently, connected them with Demetrios Poliorketes (#62–63, cf. 64–65). The limited size of this issue is strongly suggested by the same obverse die for both V-7 and #62 of *BCD Boiotia*.

29. *IGCH* lists only two fifth-century Peloponnesian hoards with any (around 3–5%) Theban material (#28, #40). But the same book notes Theban coins in twelve Peloponnesian hoards of the fourth century (#48, #60, #67, #68, #74, #75, #76, #102, #107, #108, #113,

cenaries in Boiotian service to Kassander.³⁰ The phenomenon was, however, short lived, for the Stymphalos hoard is one of the last Peloponnesian hoards to include Boiotian material until the great Diakofto hoard of c. 146 BC,³¹ even though Boiotia continued production of silver coins into the third century.³²

Such a mixture of currencies in someone's purse was presumably all acceptable tender in Stymphalos. Precious-metal coins would always have been negotiable anywhere for at least their bullion value, though one presumably would have lost any overvaluation of the intrinsic value that the issuing state might have added. Whether or not one state's token-value bronzes would have been accepted abroad is a complex and contentious issue, principally owing to the fact that such coins had a face, or fiduciary, value in excess of their intrinsic value, something that a foreign state would not necessarily want, or need, to honor. No doubt actual practice varied from place to place and time to time, and one should be careful to distinguish informal practice from official sanction.³³ As for Stymphalos, she was such a minor emitter that all but five of the 492 coins found there by the Canadian excavators had been minted elsewhere.

Once again, the practice evident from the coins from the Athenian Agora is instructive. The general rule of thumb, on the understanding that bronzes were overvalued tokens not redeemable as such anywhere outside their state of issue,

#122). Although the proportions of Theban coins fluctuate widely from instance to instance, they usually constitute a sizeable proportion (10–53%) in hoards closed between 350 and 300 BC (*IGCH* #60, #67, #68, #74, #75, #102, #107, #108, and #122, but not #76) and almost all (95%) of the coins in *IGCH* #113, which was closed at the end of the century. Given that fourth-century hoards from Greece outnumber fifth-century ones by a factor of two (as seen, for instance, in *IGCH*), the six-fold increase of Theban material in Peloponnesian hoards over the same period is striking. The relative scarcity of fifth-century coins of Thebes is further indicated by presence of only fourth-century issues in fourth-century hoards.

30. *IGCH* #102, #108, #113, #122 (see n. 29 above). In 316 BC, Kassander restored the Thebes that Alexander had razed and plausibly used the city as a staging post in his campaigns of consolidation in southern Greece (*MarmPar* B14; Polyb. 38.3.1; Diod. 19.53.1–3, 19.54.1–3, 19.62.1; Prop. 2.6.5–6; Strabo 9.403a; Plut. *Demetr.* 40.6; Plut. *Mor.* 814B; Paus. 7.6.9, 9.3.6, 9.7.1–4; Aelian, *VH* 3.6).

31. *IGCH* #262: seven Theban hemidrachms out of over three thousand coins.

32. Martin (1985, 169) dates the cessation of both Theban and Boiotian federal issues to 335 BC on historical grounds (i.e., the destruction of Thebes). However, numismatic evidence from the Korykian Cave extends the issue by the Boiotian League of silver hemidrachms and bronzes into the early third century BC (Picard 1984, 188–189).

33. An analogous situation is the widespread yet completely unofficial circulation of U.S. coins in Canada at par, and vice versa (*Agora*, 170). Paper money (like ancient silver coins) is a different matter and does not pass at face value: it is either subject to some revised calculation of its value or may have to be physically exchanged for the other currency (Canadian dollars in the United States) before it can be spent.

has been that patterns of specifically bronze-coin circulation reflect the movements of people, not the currents of trade. But a different picture is now emerging from the publication of excavation coins from major sites such as the Athenian Agora. Most Greek bronzes of the fourth century and later were sized between about 15 and 25mm, and as such they were generally negotiable in commerce, be it at Athens, Corinth, or elsewhere.³⁴ Modest hoards from the Athenian Agora and elsewhere that do incorporate bronze coins frequently contain a mixture of mints: for one Athenian of the mid-third century BC, 15mm coins of Larissa, Phokis, Chalkis, and Demetrios Poliorketes were all equally worth saving (Agora A 18:8 Hoard). Each foreign coin was apparently negotiable at par with the similarly sized *dichalka* (or quarter obols) of Athens. Since the value of each *dichalkon* was so low (one twenty-fourth of a silver drachm), the easiest course of action was generally to permit, if not officially sanction, the at-par exchange of foreign bronzes. In the case of Athens, the acceptability of foreign bronzes was clearly economically motivated, for as soon as Athens did begin producing her own bronzes in greater quantities and more varied denominations in the late third century, the percentage of foreign bronzes in circulation dropped from 20% to anywhere between 7% and 2% in the centuries after 220 BC, and if one considers foreign bronzes put aside in hoards there is a more drastic drop from 30% (Agora A 18:8 Hoard) to 0.3%.³⁵

The lesson for Stymphalos is clear: since the city only ever minted sporadically and in very small quantities, it relied inevitably and enormously on foreign coins for its needs. Of all the coins recovered from Stymphalos of all periods, 41% are Sikyonian, 14% are Corinthian, 5% are Phliasian, and 8% are Macedonian. The remaining 32% of the currency pool, almost all of it in bronzes, came from about thirty mints or issuing authorities in the Peloponnese, central Greece, Sicily, and Ptolemaic Egypt.³⁶ Given the eclecticism of the local currency pool, all the varied coins contained in the lost pouch of the hoard were negotiable and no doubt sorely missed by their owner. The hoard's total value would have been two and a quarter obols shy of two Aeginetan staters, which makes it thus conceivable that the purse's owner had recently visited a Stymphalian moneychanger and paid a 10% commission in return for more convenient small change before his purse fell from his belt to be lost for 2,300 years.³⁷

34. *Agora*, 168.

35. *Agora*, 169.

36. The excavation coins still await publication by this author.

37. A moneychanger's commission (*agio*) of 10% is admittedly hypothetical and higher than the 5% to 7% rates attested for the Hellenistic world outside of Egypt (Sosin 2002, 337). But if Martin is correct to suggest that in the fourth century agora commission rates were determined *ad hoc* by competing moneychangers (1985, 211), then a figure of 10% might not be unreasonable, given the right conditions.

CATALOGUE OF COINS FROM THE FORTIFICATIONS (STYM IV–VI,
VIII, XIII)

EPEIROS: AMBRAKIA (1)

Date: 238–168 BC

Cat.: VI-1 *Denom.*: tetrachalkon?; *Metal & Size*: Æ 17; *Weight*: 2.0; *Die-Axis*: 12;
Wear: heavy; *Stratigraphy*: Tr 99.1, L 1, P 1, SF 1, 17/07/99; *Cat.*: 2372

Obverse: laureate and veiled head of Dione to right

Reverse: obelisk of Apollo, which divides the legend [A] – M / [B] – P; all
 within laurel wreath

Reference: *BMC Thess.* #5–7

Notes: pottery context fourth c. BC to first c. AD (?); surface find

MACEDONIA: DEMETRIOS POLIORKETES (2)

Date: c. 300–295 BC

Cat.: IV-1 *Denom.*: dichalkon; *Metal & Size*: Æ 16; *Weight*: 2.5; *Die-Axis*: 12; *Wear*:
 slight–moderate; *Stratigraphy*: Tr 97.7, L 2, P 4, SF 18, 22/07/97; *Cat.*:
 1390

Obverse: head of Demetrios (?) to right, wearing crested Corinthian helmet

Reverse: prow of galley to right; BA above; double-headed axe to right; Ɱ
 monogram below.

Reference: Newell 1926: 149, #162–163 (“Caria”)

Cat.: IV-2 *Denom.*: as IV-1; *Metal & Size*: Æ 16; *Weight*: 4.2; *Die-Axis*: 6; *Wear*:
 moderate; *Stratigraphy*: Tr 02.1, L 1, P 1, SF 2, 14/06/02; *Cat.*: 4481

Obverse: as IV-1

Reverse: as IV-1, but BA above; Ɱ monogram below; nothing visible to
 right

Reference: Newell 1926: 25, #20 (Salamis, Cyprus)

THESSALY: LARISSA (1)

Date: c. 360–325 BC

Cat.: XIII-1 *Denom.*: tetrachalkon?; *Metal & Size*: Æ 20; *Weight*: 5.7; *Die-Axis*: 12;
Wear: slight–moderate; *Stratigraphy*: Tr 01.2, L 4, P 4, SF 13, 04/07/01;
Cat.: 3894

Obverse: laureate head of Apollo (?) with short hair to right

Reverse: horse grazing to right; ΛΑΠΙ - [ΣΑΙΩΝ] above and below

Reference: sim. BMC Thess. #89

Notes: from foundations of Pheneos Gate

EUBOIA: CHALKIS (1)

Date: c. 325 BC

Cat.: IV-3 *Denom.:* dichalkon?; *Metal & Size:* Æ 14; *Weight:* 2.2; *Die-Axis:* 3; *Wear:* moderate-heavy; *Stratigraphy:* Tr 99.4, L 6, P 8, SF 26, 05/08/99; *Cat.:* 2613

Obverse: head of Hera (?) three-quarter facing to right, wearing a diadem surmounted by five disks

Reverse: XA [Λ] (retrograde); eagle flying to right carrying snake; in talons and beak

Reference: probably as Picard 1979: 48, #16 (retrograde legend, no symbol); probably as *BMC Centr.* #70

Notes: pottery context fourth to third c. BC; if this is an example of Picard #16, then it stands fifth out of eleven in the relative sequence of the bronze issues for 338–308, thus c. 325; found in period-of-use level of STYM IV artillery tower

ATTICA: ATHENS (1)

Date: 130–90 BC

Cat.: V-9 *Denom.:* dichalkon; *Metal & Size:* Æ 14; *Weight:* 2.6; *Die-Axis:* 11; *Wear:* moderate-heavy; *Stratigraphy:* Tr 99.6, L 1, P 1, SF 3, 09/07/99; *Cat.:* 2143

Obverse: head of Athena Parthenos to right, wearing decorated Athenian helmet

Reverse: ΑΘ[Ε] beneath two owls standing to right and to left, their heads facing; all within olive wreath

Reference: Agora #99; *BMC Att.* #214; Mørkholm 1991, pl. XIII.210 (= Kroll 1979, variety D)

Notes: pottery context fourth c. BC to modern; surface find in small tower 30m south of the West Wall Tower

CORINTHIA: CORINTH (1)

Date: late fifth century to c. 248 BC

Cat.: VIII-1 *Denom.:* chalkous; *Metal & Size:* Æ 12; *Weight:* 1.1; *Die-Axis:* 8; *Wear:* moderate-heavy; *Stratigraphy:* Tr 00.7, L 4, P 4, SF 8, 25/07/00; *Cat.:* 3653

Obverse: Pegasos flying to left

Reverse: ornamented trident head; no symbols or letters visible

Reference: Price 1967: 115–137, pl. 6-10; *BMC Cor.* #423–471

PHLIASIA: PHLIOUS (4)

Date: c. 400–350 BC

Cat.: IV-4 *Denom.:* dichalkon?; *Metal & Size:* Æ 16; *Weight:* 2.6; *Die-Axis:* 4 or 10;

Wear: slight–moderate; *Stratigraphy:* Tr 97.1, L 10, P 11, SF 19, 23/07/97;

Cat.: 1416

Obverse: bull butting to left

Reverse: large Φ surrounded by three pellets

Reference: Mac Isaac 1988: 49–53: Issue 1, Type A var.

Notes: pottery context c. 350–325 BC

Cat.: IV-5 *Denom.:* as IV-4; *Metal & Size:* Æ 14; *Weight:* 2.2; *Die-Axis:* 3 or 9;

Wear: moderate–heavy; *Stratigraphy:* Tr 99.1, L 5, P 7, SF 27, 05/08/99;

Cat.: 2614

Obverse: as IV-4

Reverse: as IV-4, but four (?) pellets

Reference: as IV-4, but not variant

Notes: pottery context fourth to second c. BC

Cat.: IV-6 *Denom.:* as IV-4; *Metal & Size:* Æ 16; *Weight:* 2.9; *Die-Axis:* 6 or 12;

Wear: moderate; *Stratigraphy:* Tr 99.4, L 4, P 6, SF 25, 01/08/99; *Cat.:*

2501

Obverse: as IV-4; *Reverse:* as IV-5

Reference: Mac Isaac 1988: 49–53: Issue 1, Type B

Notes: pottery context fourth to third c. BC

Cat.: XIII-2 *Denom.:* as IV-4; *Metal & Size:* Æ 14; *Weight:* 1.5; *Die-Axis:* 1 or 7;

Wear: slight; *Stratigraphy:* Tr 01.2, L 5, P 5, SF 36, 07/07/01; *Cat.:* 3976

Obverse: as IV-4

Reverse: as IV-5

Reference: as IV-5

SIKYONIA: SIKYON (2)

Date: c. 330/320s–c. 280s BC

Cat.: V-13 *Denom.:* hemidrachm; *Metal & Size:* AR 14; *Weight:* 2.6; *Die-Axis:* 12;

Wear: slight; *Stratigraphy:* Tr 99.3, L 5, P 7, SF 13, no date; *Cat.:* 2319

Obverse: Chimaera standing to left; ΣΙ below
Reverse: dove flying to left; no letters or symbols
Reference: *BMC Pelop.* #114

Date: late third c. BC?

Cat.: VIII-2 *Denom.:* dichalkon?; *Metal & Size:* Æ 15; *Weight:* 2.5; *Die-Axis:* 12;
Wear: moderate; *Stratigraphy:* Sondage 1, L 1, P 1, SF 7, 21/07/00; *Cat.:*
 3502

Obverse: dove flying to left
Reverse: ΣΙ within wreath that ties above
Reference: Warren 1983, Group 4C.8³⁸
Notes: pottery context second c. BC to first c. AD

ELIS: OLYMPIA (1)

Date: early to mid-third century BC

Cat.: IV-7 *Denom.:* dichalkon?; *Metal & Size:* Æ 17; *Weight:* 3.0; *Die-Axis:* 3; *Wear:*
 moderate; *Stratigraphy:* Tr 99.2, L 8, P 10, SF 22, 28/07/97; *Cat.:* 2432

Obverse: laureate head of Zeus to left
Reverse: horse galloping to right; FA below; no lettering visible above
Reference: sim. *BCD Olympia* #272; sim. *BMC Pelop.* #130
Notes: pottery context fourth to third c. BC

ZEUGITANA: CARTHAGE (1)

Date: late fourth century BC

Cat.: V-17 *Denom.:* —; *Metal & Size:* Æ 16; *Weight:* 2.5; *Die-Axis:* 2; *Wear:* near
 mint; *Stratigraphy:* Tr 99.3, L 5, P 6, SF 9, 18/07/99; *Cat.:* 2270

Obverse: wreathed head of Tanit to left
Reverse: horse standing to right; behind, a palm tree; three pellets in right
 field
Reference: sim. Jenkins and Lewis 1963, pl. 26.12
Notes: pottery context fourth to third c. BC

38. Warren (1983, 41) assigns type 4C.8 to the final phase of her Group 4C on the basis of stylistic similarities to her Groups 8.1 and 8.2 (first half of the second century BC), and thus dates it to the late third century BC. But the archaeological confirmation for such a date is “disappointingly inconclusive” (1983, 42). On the other hand, the pottery contexts of other examples excavated at the Athena sanctuary (STYM II) suggest a date no later than the end of the fourth century BC for 4C.8.

INTERPRETATION OF THE COINS FROM THE FORTIFICATIONS

A diachronic graph of the coins recovered from the fortifications shows a sharp drop soon after 300 BC (Fig. 1). The 1999 hoard was a one-time, anomalous deposit of relatively many coins and is thus not included in this graph, which is intended to show a trend of casual loss over a few centuries.³⁹ A trend based on a sample size of only 15 coins gains more credibility when one notes a similar curve for a group of 98 coins from the Athena sanctuary (STYM II). It appears that both the fortifications and the Athena sanctuary shared a common decline in economic activity in the early third century BC. At least, both data sets show that fewer coins were being lost in later years. A look at a similar graph plotted for the domestic quarter (STYM I), where indeed most of the coins excavated at Stymphalos were found,⁴⁰ suggests that this area gained in relative importance during the Hellenistic age after mirroring the rest of the site up to that point. What the graph line for STYM I does not show, because of its chronological limits, is a numismatic presence in the mid-fifth century BC and a strong showing of issues from the *colonia* of Corinth in the Julio-Claudian period. Outside of rather narrow chronological limits, the fortunes of the Stymphalian fortifications were unconnected with those of the city as a whole (Fig. 2).

Despite the apparent vibrancy of the domestic quarter of Stymphalos in the middle century of the Hellenistic age, one can be sure of quite a different situation for the fortifications, because the ceramic and numismatic records both show a period of use in the fourth century followed by an abandonment in the third century.⁴¹ Coins from the foundation levels of the fortifications suggest an initial phase of construction by the middle decades of the fourth century (XIII-1, XIII-2) and a reconstruction of the STYM IV and V towers on the city's more vulnerable west side at some point after the siege of 315 BC (IV-3, V-13, V-17).⁴² Pottery from the period of use of the artillery tower STYM IV is Late Classical, on the basis of some diagnostic sherds from just one trench, 99.97.1. The latest datable ceramics recovered from the debris of that tower's destruction date to the "late third century" and "after 220 BC."⁴³ The latest of two coins from the destruction debris of the great artillery tower (STYM IV) gives a *post quem* of the early/mid-third cen-

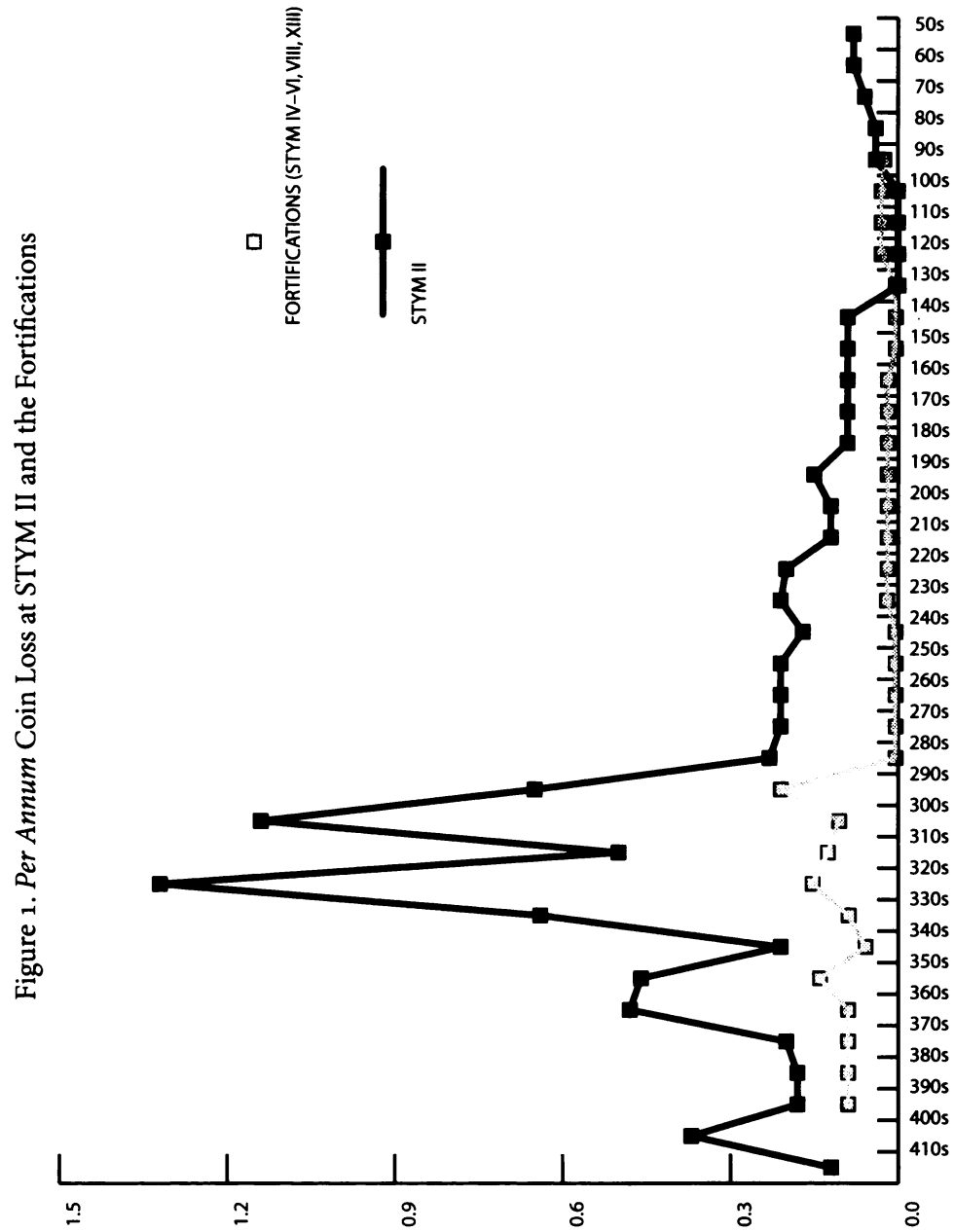
39. Inclusion of the hoard would simply accentuate the spike while moving it very slightly to the right, but the same impression would still prevail.

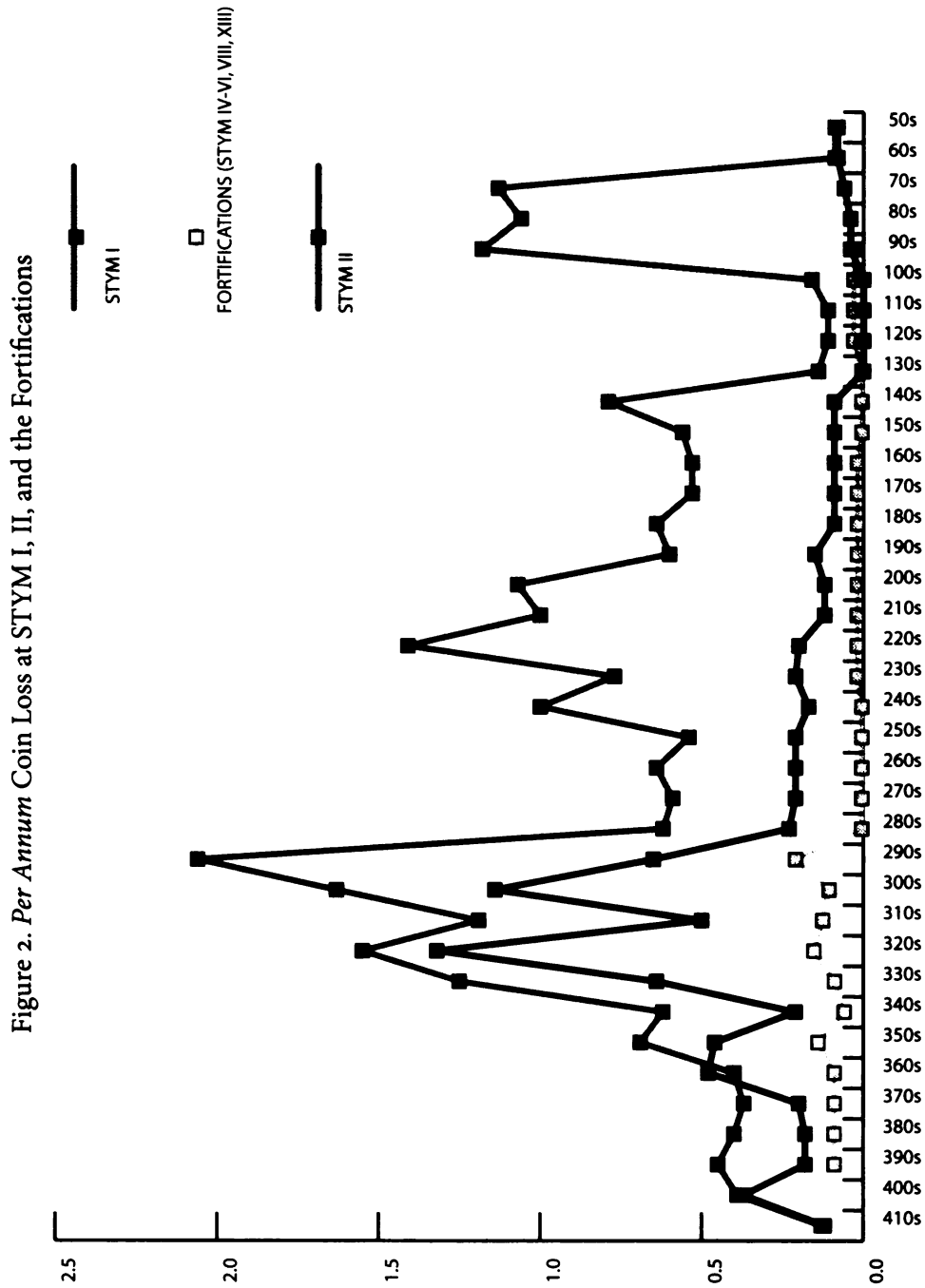
40. STYM I accounts for 292 of 492 coins (59%). Some were omitted from the graph calculation either because they were unidentifiable or fell outside its chronological limits.

41. Williams and Gourley (2005, 249–257).

42. Williams and Gourley (2005, 249).

43. Williams and Gourley (2005, 220); Morris (2003).





ture BC (IV-7). The only coins from the fortifications postdating the third century were surface finds of limited stratigraphic value (in each case, the associated pottery spanned several centuries) that were evidently dropped after the fortifications' ruin (V-9, VI-1).

The historical record gives no conclusive explanation for the fortifications' short lifespan, though a possible scenario suggests itself. Given the presence of the Demetrios bronzes in the 1999 Hoard, one should associate both it and the concomitant work on the fortifications with the Besieger's presence in the Stymphalos area in the early years of the third century, most plausibly in 294 BC. When that year began, Demetrios could see his way to claiming the throne of Macedonia, provided that he could first consolidate his power in the south, which he did by capturing Athens⁴⁴ and then marching to Mantinea achieving a victory there over the Spartan king Archidamos.⁴⁵ For Archidamos to intercept Demetrios on the strategically located plain of Mantinea, the latter must have marched south from his base at Sikyon,⁴⁶ which was conveniently located near the head of a string of valleys that led, via Stymphalos, to the center of the Peloponnese. By virtue of its position, Stymphalos would have been a useful listening post for Demetrios to secure while passing through the area. Perhaps the locals felt they had no other option but to welcome him, since their fortifications seem not to have been repaired in the twenty years since 315 BC. Refitting Stymphalos with new defenses and possibly an armed force to man them was in any case consistent with Demetrios's practice in southern Greece.⁴⁷

The abandonment of the fortifications, and possibly their concomitant destruction, is not so easily matched with the historical record. Although the sudden scarcity of coins minted in the 280s BC does not necessarily indicate an abandonment in that decade, the almost total absence of coins dating any later means that one should not look too far downstream for a historical opportunity.⁴⁸ The presence at all of Stymphalos of just a single Macedonian coin (of Antigonos Gonatas) postdating the twenty of Demetrios Poliorketes and seventeen of Kassander indicates a disappearance of Macedonian troops and their pay from the place by

44. Diod. 21.9.1; Plut. *Demetr.* 33.1–3, 33.8–34.7; Plut. *Mor.* 183B; Paus. 1.25.7–8, 1.29.10; Polyain. 3.7.1, 4.7.5.

45. Plut. *Demetr.* 35.1–2, 35.6; Paus. 1.13.6, 7.8.5; Polyain. 4.7.9–10.

46. Sikyon had been in his possession since 303 BC, which was also when he had refounded the city a few kilometers farther inland and renamed it Demetrias (Diod. 20.102.1–4; Strabo 8.382e; Plut. *Demetr.* 25.3; Paus. 2.7.1; Polyain. 4.7.3).

47. Polyb. 2.41.10, 9.29.5–6.

48. The assassination of Kleon, the tyrant of Sikyon/Demetrias, is undated in the sources (Plut. *Arat.* 2.1; Paus. 2.8.1–2) but may belong to the turmoil of 272 BC. I owe this observation to Andrew Stewart, the compiler of the Attalus Web site (<http://www.attalus.org>).

the second quarter of the third century BC, possibly in the eventful year 272 BC, when the colorful Pyrrhos of Epiros undertook his final adventure. That year, he took up a disaffected prince's invitation to attack Sparta, which he besieged unsuccessfully until King Areus returned from Crete to raise the siege and chase the opportunist north to Argos.⁴⁹ Pyrrhos's son, Ptolemaios, was slain in the pursuit, and the hapless father had no sooner forced his way into Argos than he too perished by the singular ignominy of a roof tile lobbed by an old woman.⁵⁰ Pyrrhos's invasion and the Spartans' counterattack had evidently thrown the Peloponnese into turmoil, for King Antigonos Gonatas of Macedonia had to reconsolidate his hold on the entire region later that year.⁵¹ In such a context, one can easily imagine how the listening post of Stymphalos might have lost its defenses at the hands of some party or other, whether it was Pyrrhos invading, the pursuing Spartans, revolting Stymphalians, or even King Antigonos.

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49. Kleonymos invites Pyrrhos to Sparta: Plut. *Pyrrh.* 26.14–19; Paus. 1.13.4–5, 3.6.3, 4.29.6; Justin [Pomp. Trog.] 25.4.1–5. Pyrrhos negotiates with the Spartans: Plut. *Pyrrh.* 26.19–24, *mor.* 219F; Paus. 1.13.6; Polyain. 6.6.2. Pyrrhos attacks Sparta: Plut. *Pyrrh.* 27.1–29.10; Paus. 1.13.6, 7.8.5; Polyain. 8.49.1; Justin [Pomp. Trog.] 25.4.6–9. Areus: Plut. *Pyrrh.* 29.11–30.1.

50. Death of Ptolemaios: Plut. *Pyrrh.* 30.2–31.1. Death of Pyrrhos: Livy 29.18.6; Strabo 8.376e; Valerius Maximus 5.1e.4; Pliny, *NH* 7.20; Plut. *Cleomenes* 18.1, *Pyrrh.* 31.1–34.11; Paus. 1.13.7–9; Polyain. 8.68.1; Aelian, *NA* 10.37; Justin [Pomp. Trog.] 25.5.1–2; [Aurel. Vict.] *VirIll* 35.10–11; Orosius 4.2.7; Malalas 325A; Zonaras 8.6h–i.

51. Justin [Pomp. Trog.] 26.1.1–3; Paus. 2.8.1–2.

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The Gold Coinage of Trajan Dated COS V

PLATES 6–22

JOEL ALLEN*

The coins minted in Rome between 103 CE, when Trajan held his fifth consulship, and 111 CE, when he held his sixth, have been notoriously difficult to arrange chronologically, because of the emperor's unchanging titulature. However, a die study of the gold coinage suggests a clustering of coins into different series within the so-called COS V period. Once the clusters are established by die links, an investigation of their reverse types reveals subtle changes in imperial ideology and helps to resolve—or at least offers new evidence for—controversies in the historiography of Trajan's reign, such as the existence and aspect of a temple in his forum, the annexation of Arabia, and the reform of the mint.

Sifting through the ancient sources on Trajan is a little like scanning a newspaper's headlines and photographs, minus the articles. Cassius Dio's full account is lost, and what we have instead are the epitomes of Byzantine scholars who reduced, paraphrased, and rearranged the original into maddeningly brief snippets; from them we have more of an approximate timeline rather than a history. Scholars have long sought to flesh out the skeleton with the material evidence from the era, mostly from monumental sculpture and coins, but these, too, have had their limitations. Like the jumbled Byzantine summaries, the coins are a beautiful mess: they are rich and varied in their reverse and obverse types, yet their potential has

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not been realized, owing to gaps in our understanding of their chronology. While coins of other emperors can be dated by their regular, annual offices and epithets, there are periods when Trajan's titulature is constant. The period from 103 to 111, between the emperor's fifth and sixth consulships, is particularly troublesome: thousands of coins—nearly a decade's worth—bear witness to a flurry of activity from Trajan's middle years yet are monotonously labeled only with COS V as an indicator of date. This makes it difficult to place them in true order.¹ While the millennia have not been kind to written accounts, the gold of the coins is tantalizingly incorruptible: untarnished illustrations or evocations of the Second Dacian War, the annexation of Arabia, and the promotion of the *alimenta* are all preserved in the crispness of the medium. The period of COS V also apparently saw the reform of the mint itself, when coins that had become worn over time were recalled, melted down, and reissued with a variety of reimagined types from previous generations. One of Dio's epitimators, Xiphilinus, gives us seven words on this reform,² but we have dozens of *aurei* and *denarii* issued under it, as they repeat images from the Republic and from select Julio-Claudian and Flavian emperors, only now encircled by Trajan's words (discussed below).

This study seeks to elucidate the literary record and to set aright, at least in part, the numismatic one with a preliminary arrangement of the *aurei* from the COS V period based on the die links among them.³ The discovery of series, or groupings, of shared obverse dies offers, I believe, a corrective to previous attempts at dating the COS V coinage, most notably by Paul Strack, Harold Mattingly, and Philip Hill, who based their conclusions largely on perceived changes in portrait styles and on hypotheses concerning iconography that existed in the coinage either before or after COS V. To be sure, some crucial questions will go unanswered:

1. This paper throughout will refer to the nine-year period with the shorthand "COS V." The most significant previous studies of the COS V coinage are Strack (1931), Mattingly (1936/1966), and Hill (1970). For specific discussion of the COS III chronology, see Wolters (1993), and for the COS VI, see Beckmann (2000). The abbreviation *BMC* throughout refers to the 1966 reprint and revised edition of the 1936 catalog *The Coins of the Roman Empire in the British Museum*. Other abbreviations follow those used in the third edition of the *Oxford Classical Dictionary*.

2. Cass. Dio, 68.15.2: τό τε νόμισμα πᾶν τὸ ἐξίτηλον συνεχώνευσε ("He also caused all the money that was badly worn to be melted down."). Walker (1977, 55–56) discusses the effects of the reform on the silver coinage.

3. The sample used for this study was of 322 coins, taken largely from published hoards, from the plates of major published collections, and from the photo file of old auction catalogs at the American Numismatic Society. Fourteen of the coins were examined firsthand in the ANS collection, and additional photographs from the British Museum, the Hunter Coin Cabinet, and the Münzkabinett of the Kunsthistorisches Museum in Vienna also complemented the larger sample.

Table 1. Sequence of Legend Combinations

Series	Number of Coins	Legend
1	2	<i>Obv:</i> IMP CAES NERVA TRAIAN AVG GERM <i>Rev:</i> DACICUS COS V PP
2	11	<i>Obv:</i> IMP NERVA TRAIANUS AVG GER DACICUS \ <i>Rev:</i> PM TR P COS V PP
3	103	<i>Obv:</i> IMP TRAIANO AVG GER DAC PM TR P COS V PP <i>Rev:</i> SPQR OPTIMO PRINCIPI
4	206	<i>Obv:</i> IMP TRAIANO AVG GER DAC PR TR P <i>Rev:</i> COS V PP SPQR OPTIMO PRINC

with a canvas the size of a U.S. penny, the pictures can hardly reveal much. But knowledge of the coins' order, production, and relationship to one another at least allows us to place them in historical context. In essence, a better understanding of these coins yields a better understanding of Trajan.

LEGEND COMBINATIONS AND PORTRAIT STYLES

Strack, Mattingly, and Hill all observed an apparent progression in the obverse and reverse legends of the COS V *aurei*.⁴ Table 1 charts the four basic legend combinations, both obverse and reverse, into which all of the coins can be grouped, along with the number of specimens studied in the current sample. Series 1, with only two representative specimens, displays on its reverse Trajan's new cognomen, DACICUS. This epithet's prominence on the reverse suggests its position at the beginning of the chronology. In Series 2, only slightly larger with eleven specimens, DACICUS has moved, unabbreviated, to the obverse, and P(ontifex) M(aximus) and TR(ibunicia) P(otestas) have been added to the reverse. In Series 3, coins that still bear the early portrait style (see below) have obverse legends in which PM TR P COS V PP has moved from the reverse to the obverse and DACICUS has been reduced to DAC. The reverse then highlights the new legend, SPQR OPTIMO PRINCIPI. In the last and largest series, Series 4, the COS V PP has returned to the reverse, with the PRINCIPI abbreviated as PRINC.

The sequence of Series 1 at the beginning, followed by Series 2, makes sense because of the full spelling of DACICUS and the addition of new titles in Series 2. Slightly more problematic is the order of Series 3 and 4 coming next. As argued by Strack and followed by Mattingly, their order can be determined by two fac-

4. Strack (1931, 33–34); Mattingly (1936/1966, lviii–lx). Hill (1970, 29–30, 36–37) is unclear concerning the legend combinations for the *aurei* of the so-called post-reform period.

Table 2. Reverse Types of COS V Aurei

Series	Type	No. of Specimens	Description
1	I.	1	Trajan riding l. in a quadriga
	II.	1	Dacian seated r. on the ground
2	I.	9	Trajan riding l. in a quadriga
	II.	2	Dacian seated r. on the ground
3 ₁	I.	1	Roma standing with l. foot on the head of a Dacian
	II.	1	Dacian seated r. on the ground
	III.	3	Female figure standing r., emptying a cornucopia
	IV.	3	Senator standing r. and Dacian kneeling r., facing Trajan
	V.	10	Trajan riding l. in a quadriga
	VI.	33	Trajan riding on horseback, attacking a fallen Dacian
	VII.	4	Trajan standing with l. foot on the head of a Dacian
	VIII.	1	Statue of Hercules with a club in his l. hand
3 ₂	IX.	39	Wreath encircling legend
	IX.b	2	Wreath encircling legend variant (PRINC for PRINCIPI)
	X.	2	Hercules standing l., sacrificing at an altar
	XI.	2	Eagle perched on a thunderbolt
	XII.	2	Jupiter enthroned l.
4 ₁	I.	5	Hercules standing l., sacrificing at an altar
	II.	11	Wreath encircling legend
	III.	10	Octastyle temple
	IV.	16	Eagle perched on a thunderbolt
	V.	7	Jupiter enthroned l.
4 ₂	VI.	4	Trajan riding l. in a quadriga
	VII.	17	Trajan standing r. with spear on l. shoulder ("adlocutio")
	VIII.	36	Libertas holding a pileus in r. hand and torch in l. arm
	IX.	36	Abundantia holding wheat in r. hand and torch in l. arm
	X.	29	Arabia holding a branch in r. hand, with a camel in l. field
4 ₃	XI.	1	Roma kneeling r. and children standing r., facing Trajan. In exergue: ALIM ITAL
	XII.	28	Children standing r., facing Trajan. In exergue: ALIM ITAL
	XIII.	6	Roma kneeling r. and children standing r., facing Trajan. In exergue: REST ITAL

tors: the themes celebrated by their reverse types and their portrait styles.⁵ Table 2 breaks down the coins of each series in the sample according to reverse type. (The distinction of subseries 3₁, 3₂, 4₁, 4₂, and 4₃ will be discussed below in relation to the die study; note that the reverse types for each larger series are numbered sequentially with Roman numerals regardless of the subseries.) Many of the reverse types in Series 3 commemorate the Second Dacian War, which was fought from 105 to 106, in the early years of the COS V period. Such reverse types include Trajan riding in a triumphal quadriga (3.V), a seated Dacian prisoner (3.II), figures of Roma and of Trajan standing with a foot on a Dacian's head (3.I and 3.VII), figures of "Senatus" and Trajan with a kneeling Dacian between them (3.IV), and most frequent in this sample, Trajan on horseback on the verge of skewering a fallen Dacian (3.VI). The quadriga and the seated prisoner types (3.V and 3.II) are the only two reverse types in Series 1 and 2, suggesting that Series 3 is closely linked to them in time. In contrast, the reverse types of Series 4 make a single reference to Dacia: only reverse type 4.VI, which repeats Trajan in the quadriga, is carried over from the Dacian types of Series 3. In any case, on its own, this type may be taken as a generic emblem of victory and not necessarily a reference to Dacia. If anything, the reverse types of Series 4 have an affinity with the reverse types of the next phases of coinage bearing Trajan's titulature, COS V DES VI and COS VI. These later series include references to the annexation of Arabia (note our 4.X) and the revival of the *alimenta* (note our 4.XI and XII).⁶

Portrait styles also assist in ordering Series 3 before Series 4, as revealed in Table 3, which shows the distribution of the five known styles across the entire sample. The two obverse dies of Series 1 have different portrait styles: one shows the emperor's laureate bust with simple, slight drapery but without any accessory; the other shows a bust without any drapery or ornamentation about the neck. Some dies of Series 2 also carry the plain, undraped portrait, but others introduce a style whereby the undraped portrait is fronted by an aegis at the base of the emperor's neck. All three of these styles—designated in Table 3 as draped without cuirass, undraped without aegis, and undraped with aegis—carry over into Series 3. In Series 3 there are two additional styles: a depiction of the emperor from a frontal angle with both shoulders visible (hereafter, designated "frontal view"), and

5. Throughout, I use the term "portrait styles" to refer to renderings of the emperor's image on obverses, which vary with respect to drapery and ornamentation.

6. In COS V DES VI, reference to the *alimenta* appears in gold (*BMC*, 88, citing Cohen [1882], no. 16 of Trajan), silver (*BMC*, 88, citing a coin from Paris), and bronze (*BMC*, 203, citing a coin from the Vatican Museum). COS V DES VI also includes a reference to the acquisition of Arabia, but only in bronze (*BMC*, 203, citing the Stefano Johnson Collection in Milan). For the *alimenta* on coins of COS VI, see *BMC* 468–473, 973–974, 996, 1006–1007; for Arabia on coins of COS VI, see *BMC* 474–477, 977–981, 997, 1009–1011.

Table 3. Distribution of obverse dies according to portrait styles*

Type	Series 1	Series 2	Series 3 ₁	Series 3 ₂	Series 4 ₁	Series 4 ₂	Series 4 ₃
	I. II.	I. II.	I. II. III. IV. V. VI. VII. VIII. IX. IX.b X. XI. XII.		I. II. III. IV. V.	VI. VII. VIII. IX. X.	XI. XII. XIII.
Draped, without cuirass	1 (1)		1 5 2 (4) (7) (2)				
Undraped, without aegis	1 (1)	3 (3)	1 1 3 2 1 1 1 (1) (1) (3) (2) (2) (1) (1)				
Undraped, with aegis		3 2 (6) (2)	1 1 7 (1) (2) (12)	1 (2)	2 1 (2) (3)	1 (1)	
Draped, with cuirass			9 1 1 1 (13) (1) (1) (1)	19 2 2 2 1 (34) (2) (2) (2) (2)	5 6 4 6 5 (5) (9) (7) (16) (6)	2 11 24 25 15 (4) (17) (36) (36) (29)	1 12 3 (1) (28) (6)
Frontal view			1 (2)	2 (3)			

*The first number indicates the number of dies; the second, the number of specimens.

another draped profile, this one depicting the clasp of a cuirass on the single visible shoulder (hereafter, designated “draped with cuirass”). The first three portrait styles used by Series 1 and 2 are fairly evenly represented in Series 3, where the draped without cuirass appears on eight dies, the undraped without aegis on ten dies, and the undraped with aegis on nine dies (Tables 4 and 5). Much rarer is the frontal view, with three examples, and much more common by far is the new image of the draped and cuirassed portrait, exhibited on thirty-seven different dies in Series 3. By contrast, in Series 4, one style dominates: the draped and cuirassed style occurs in 119 dies, with the remaining four dies showing the undraped with aegis style. The draped and cuirassed style is also overwhelmingly present in the COS VI *aurei*, suggesting further that Series 4 was minted at the end of the COS V period.⁷

The seemingly random mix of portrait styles in Series 3 (see Table 3) does not support the conclusions of Strack, Mattingly, and Hill, who argued either a progression of styles over time⁸ or a division of styles among *officinae*.⁹ Table 6, which charts die links for sub-series 3, reveals that the portrait styles exist in the same series of legend combinations and that they are also linked by shared reverse dies. For example, as shown in the column of Table 6 representing the die links within 3.V, a single reverse die was used for striking eight coins from 3.V.2a to 3.V.4b, and this reverse die was used with three different obverse dies, each with a different portrait style—the undraped with aegis type (marked with parentheses), the draped without cuirass type (marked with square brackets), and the frontal view of the bust (marked with pointed brackets). Similarly, a combination of both obverse and reverse die links among eleven coins at 3.VI.8a–3.VI.14b reveals the simultaneous use of the undraped with aegis, the draped without cuirass, and the draped and cuirassed styles. The combination of die links permits a single conclusion: the chronological arrangement of coins of COS V by successive portrait styles is not tenable.¹⁰

DIE LINKS IN SERIES 4

The simple ordering of Series 3 before Series 4, recognized by previous scholars, falls short of providing a complete understanding of the chronology of Trajanic coinage. We may know, for example, that over the course of nine years, any of

7. In *BMC*, plates 16–20, all but one of the COS VI *aurei* illustrated (24 out of 25) depict a draped and cuirassed portrait. The one outlier, *BMC* 606 (plate 20.7), is unique in that it shows Trajan undraped with an aegis but also with a globe beneath the bust. We have omitted in this tally the *aurei* that are obviously from the COS VI period but that lack the specific COS VI designation; in any case, these all exhibit the draped and cuirassed style.

8. Strack (1931, 25–32); Hill (1970, 11–13).

9. Mattingly (1936/1966, lx).

10. Wolters (1993, 279) reaches a similar conclusion with respect to the COS II and COS III issues. The long accepted and unquestioned conclusions of Hill (1970) must be reexamined in every case.

A Note for Tables 4-10

Coins are arranged in columns according to their reverse types. (Note that in some cases—4₁ and 4₂—coins are not in the order of the catalogue, for the sake of graphical representation.) Solid vertical lines on the left signify obverse die links; solid vertical lines on the right indicate reverse die links. Lines connecting coins from one column to another indicate shared obverse dies. The following key to the notation for portrait styles is repeated from the Catalogue:

{ } Undraped, without aegis

() Undraped, with aegis

[] Draped, without cuirass

< > Frontal view (fairly rare)

Absence of brackets indicates "Draped, with cuirass" (the most common)

Table 4. Die Links for Series 1

I. Trajan riding l. in a quadriga

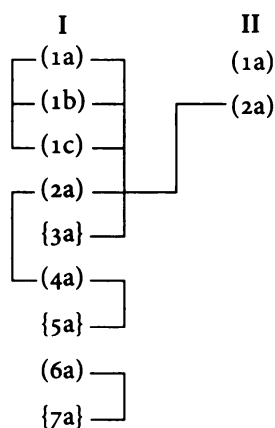
II. Dacian seated r. on the ground



Table 5. Die Links for Series 2

I. Trajan riding l. in a quadriga

II. Dacian seated r. on the ground

Table 6. Die Links for Series 3₁

I. Roma standing with l. foot on the head of a Dacian

II. Dacian seated r. on the ground

III. Female figure standing r., emptying a cornucopiae

IV. Senator standing r. and Dacian kneeling r., facing Trajan

V. Trajan riding l. in a quadriga

VI. Trajan riding on horseback, attacking a fallen Dacian

VII. Trajan standing with l. foot on the head of a Dacian

VIII. Statue of Hercules with a club in his l. hand

Table 6. Die Links for Series 3₁ continued

I.	II.	III.	IV.	V.	VI.	VII.	VIII.
{1a}	{1a}	{1a}	{1a}	{1a}	{1a}	{1a}	1a
		{2a}	(2a)	{1b}	(2a)	[2a]	
		{3a}	{3a}	(2a)	3a	[3a]	
				(2b)	(4a)	4a	
				[3a]	(4b)		
				[3b]	(5a)		
				[3c]	(6a)		
				[3d]	7a		
				<4a>	(8a)		
				<4b>	(8b)		
					(8c)		
					9a		
					(10a)		
					(11a)		
					(11b)		
					[12a]		
					[13a]		
					[14a]		
					[14b]		
					[15a]		
					[16a]		
					[17a]		
					(18a)		
					19a		
					20a		
					20b		
					21a		
					22a		
					22b		
					23a		
					24a		
					25a		
					26a		

Table 7. Die Links for Series 3₂

IX. Wreath encircling reverse legend

IX.b. Wreath encircling variant of reverse legend (PRINC for PRINCIPI)

X. Hercules standing l., sacrificing at an altar

XI. Eagle perched on a thunderbolt

XII. Jupiter enthroned, facing l.

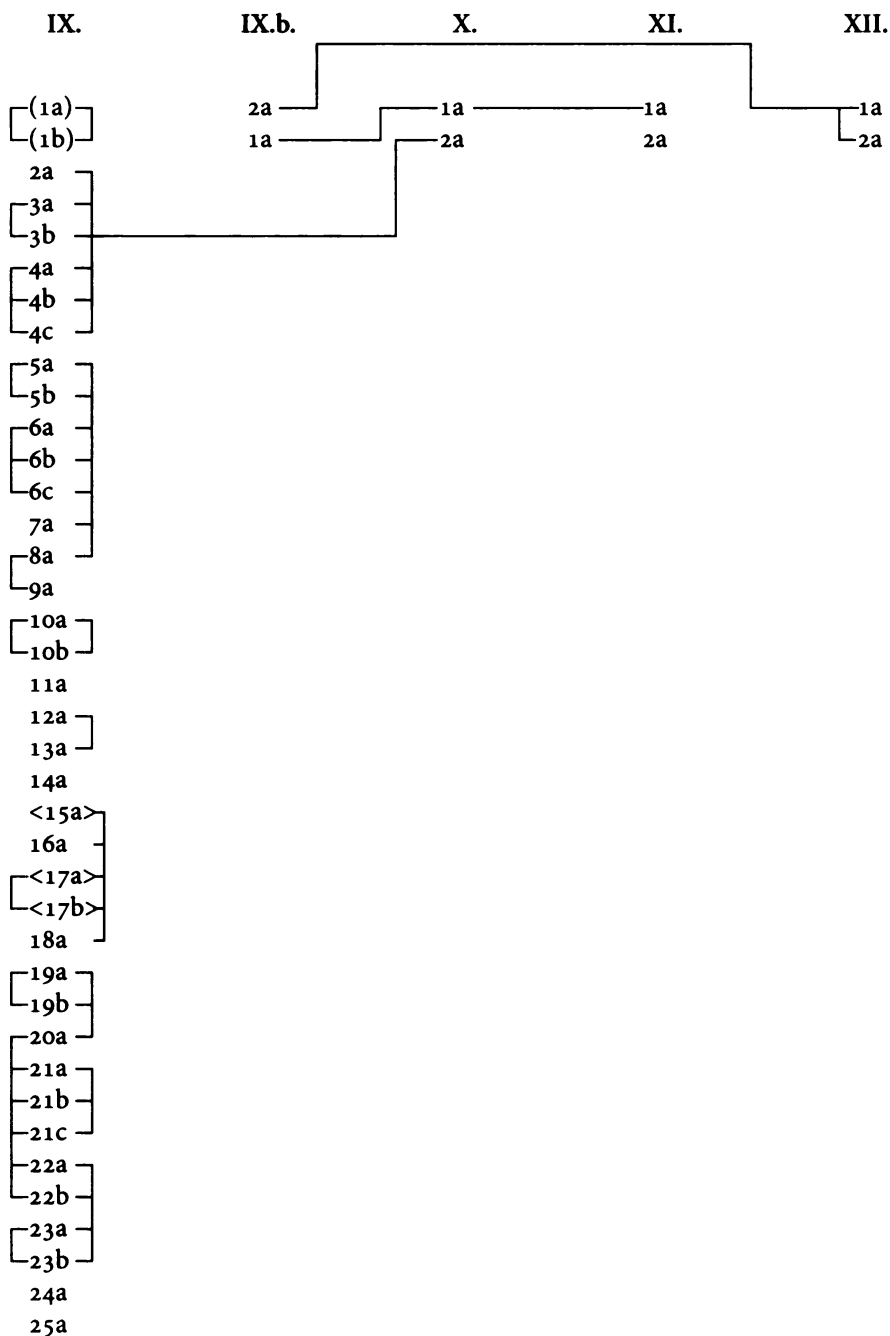


Table 8. Die Links for Series 4₁

- I. Hercules standing l., sacrificing at an altar
- II. Wreath encircling legend
- III. Octastyle temple
- IV. Eagle perched on a thunderbolt
- V. Jupiter enthroned, l.

I. II. III. IV. V.

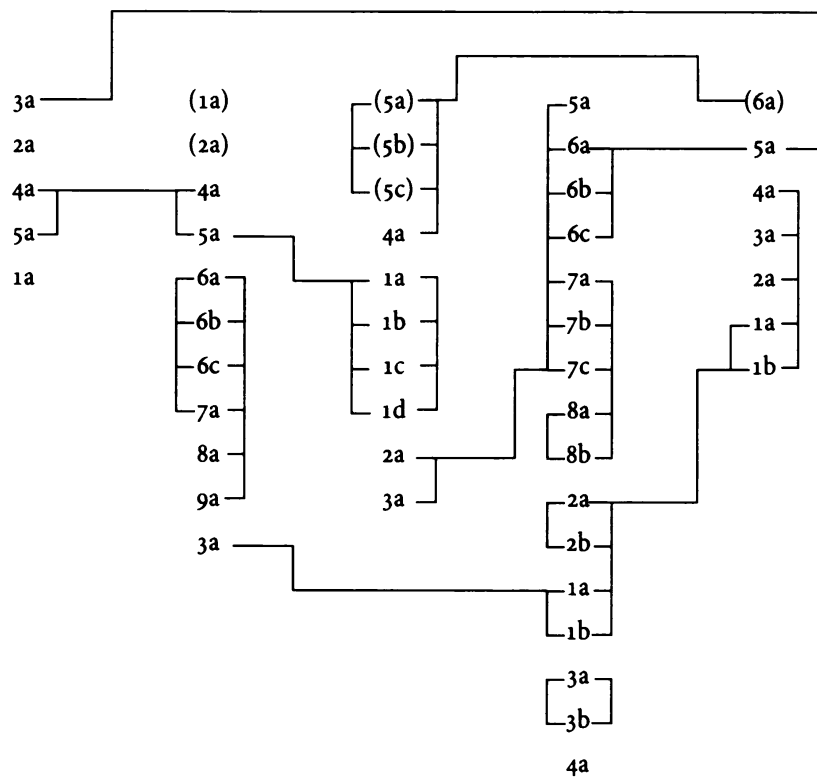


Table 9. Die Links for Series 4₂

VI. Trajan riding l. in a quadriga

VII. Trajan standing r. with a spear on his l. shoulder ("Adlocutio")

VIII. Libertas holding a pileus in r. hand and torch in l. arm

IX. Abundantia holding wheat in r. hand and torch in l. arm

X. Arabia holding a branch in r. hand, with a camel in l. field

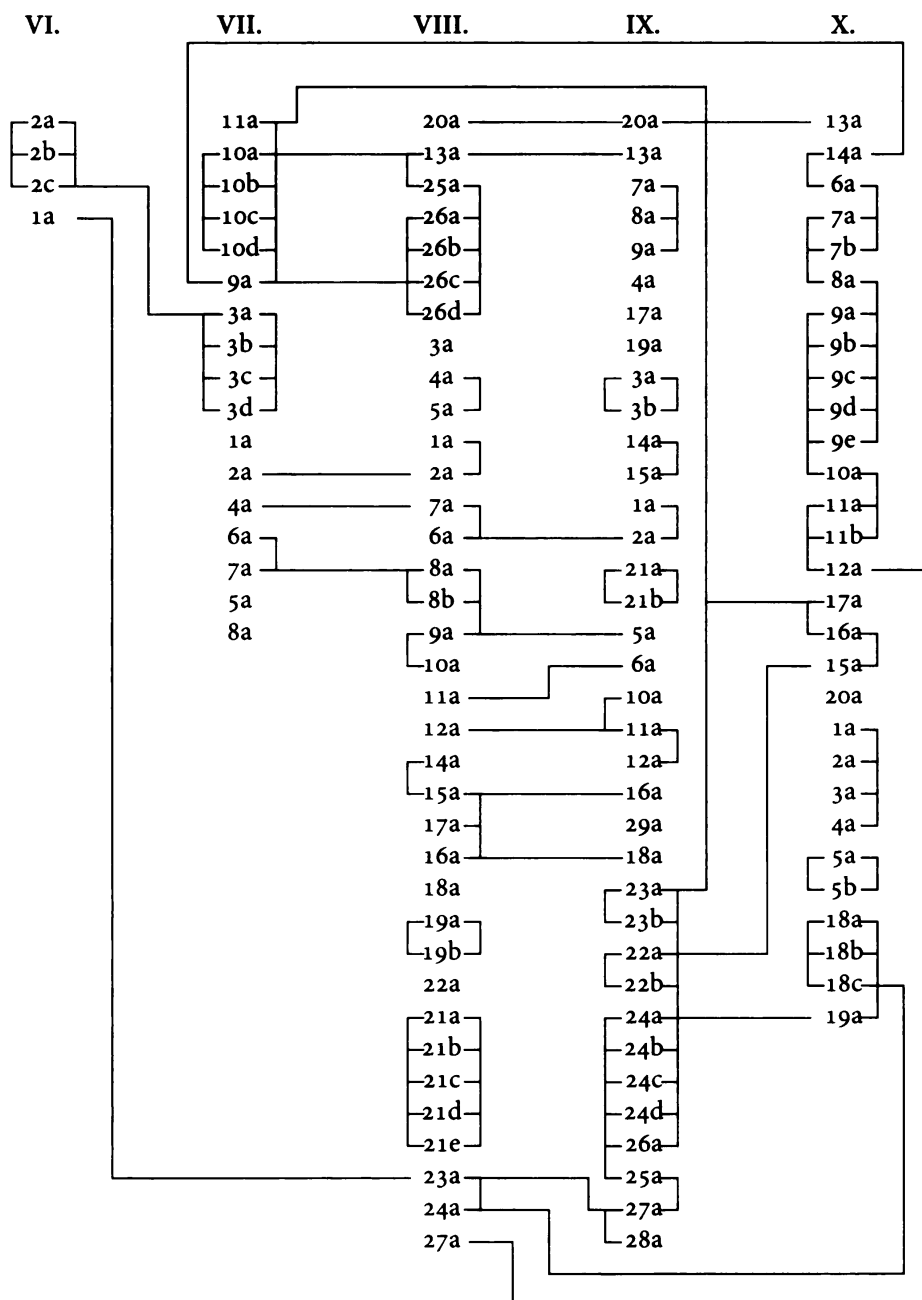
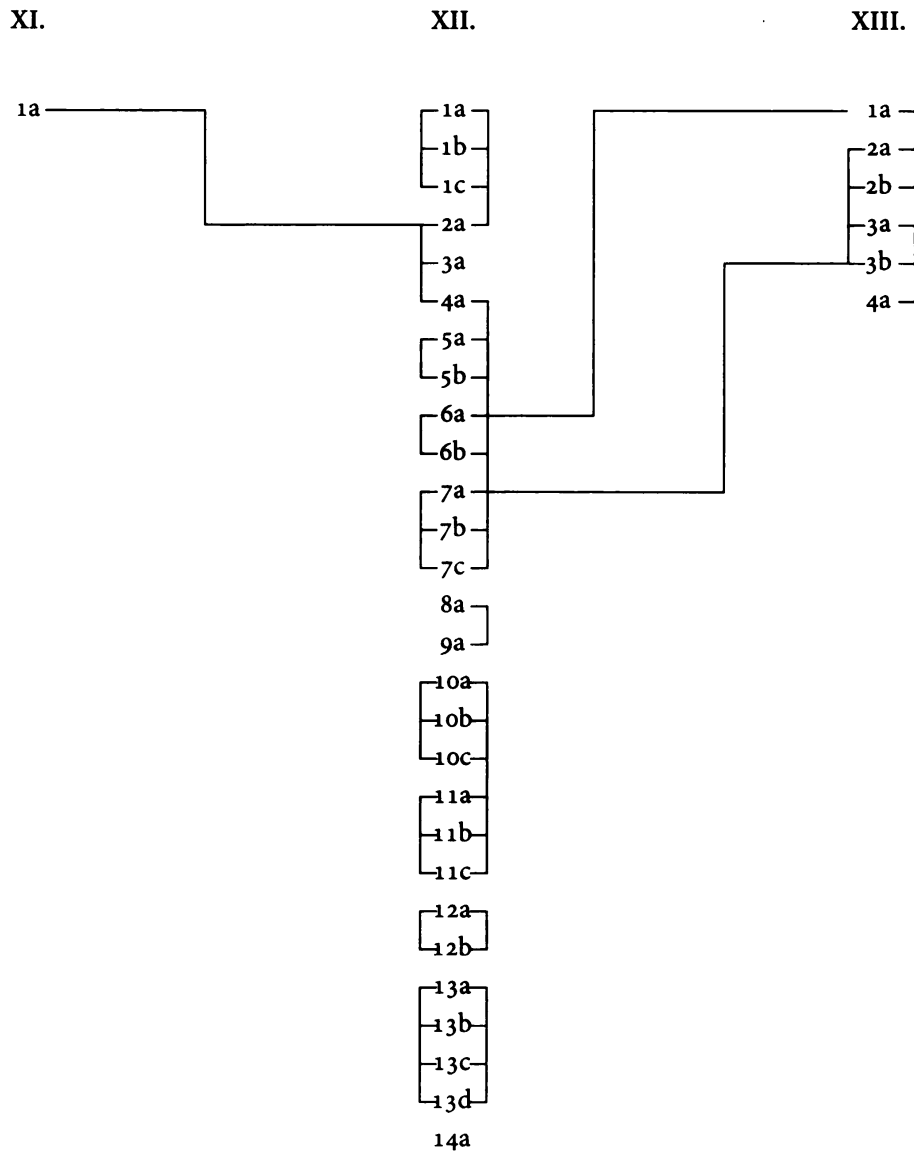


Table 10. Die Links for Series 4₃

XI. Roma kneeling r. and children standing r., facing Trajan. In exergue: ALIM ITAL

XII. Children standing r., facing Trajan. In exergue: ALIM ITAL

XIII. Roma kneeling r. and children standing r., facing Trajan. In exergue: REST ITAL



103 specimens (Series 3) came some time before any of 206 others (Series 4), but the problem remains of finding patterns within these distinct series. The die links among the coins help to clarify the chronology. For reasons that will become evident, I shall begin with a discussion of Series 4 and then proceed to Series 3.

Obverse die links are abundant within the fourth series. Of the 123 obverse dies, twenty-three are used with more than one reverse type. Furthermore, the shared obverse dies form clusters, or subseries, from among the thirteen reverse types used for Series 4. As seen in Table 8, five reverse types (4.I – 4.V) are linked by multiple shared obverse dies, but not one of the twenty-two obverse dies among them appears with the other eight reverse types of Series 4. Of course, the legend combinations for all of the Series 4 coins are identical; thus a broader sharing of obverse dies could have been possible. Since obverse die links exist among types 4.I to 4.V, these coins are arranged as a distinct subseries, Series 4₁. Table 9 shows an even wider distribution of shared obverse dies among another set of five reverse types, 4.VI through 4.X. As in subseries 4₁, not one of the fifty-two obverse dies used for specimens bearing these five reverse types appears elsewhere with the other eight reverse types of the larger Series 4, and thus another subseries, Series 4₂, is defined. Series 4₃ comprises three reverse types (4.XI–4.XIII) that share thirteen obverse dies exclusive of the other coins in Series 4, even though, again, the coins of this subseries carry legends identical to the coins of the larger Series 4.

The documented die links indicate thematic associations among the reverse types, a connection previously unnoticed. Coins of Series 4₁ are associated foremost with the god Jupiter. Four of the five reverse types allude to him directly: one shows the god himself enthroned (4.V); another features both Jupiter's bird, the eagle, and his thunderbolt (4.IV); another depicts an oak wreath (also a common symbol of the *princeps* since the age of Augustus; 4.II); and a fourth shows Jupiter's son Hercules sacrificing at an altar (4.I). The fifth reverse type of subseries 4₁, an octastyle temple (4.III), does not on its own indicate an association with Jupiter. Past scholars have associated our 4.III on *aurei* with a reverse type on bronze coins of COS V, exemplified at BMC 857–862, 915–916, and 955–957, which carry an octastyle temple with similar attributes, namely five acroterial figures and a cult statue of a male figure in a toga visible amid the columns.¹¹ Strack argued that the cult statue depicted *divus Nerva*; Mattingly tentatively accepted this possible identification but noted the absence of *comparanda*.¹²

11. *Sestertii*: BMC 857–862; *dupondii*: BMC 915–916, 955–957. For the association, note Strack (1931, 147–149), followed by Mattingly (1936/1966, cii). There are slight variations in the figures throughout the depictions; for one example, in one *sestertius* the central figure atop the pediment holds a single spear (BMC 857) while in another it holds a scepter in one hand and a cornucopia in the other (BMC 858).

12. Strack (1931, 147–149); Mattingly (1936/1966, cii).

Series 4: The Octastyle Temple Reverses

I would argue that the consistent and unequivocal attributes of Jupiter that appear elsewhere in the minter's cache of punches, as revealed by the die study, raise new possibilities for understanding this temple. Another reverse type of an octastyle temple, also appearing in bronze issues of the COS V period, with specimens at BMC 863–866 and 958, may be more useful as a *comparandum* than that suggested by Strack and Mattingly for identifying our 4.III. The temple on the bronzes at BMC 863–866 and 958 has always been viewed as distinct from our 4.III because of three prominent discrepancies: (1) there are just three acroterial figures standing on the roof line, not five; (2) the cult statue is of a seated figure, not a standing male; and most important, (3) the temple in these bronze issues is depicted as flanked on both sides by colonnades that project outward in perspective. Scholars working on these bronze coins have disagreed over the identity of the cult statue, which is depicted in miniature with a lack of clear detail, but Packer, citing the scepter in the figure's right hand and winged victory in its left, along with acroterial Victories on the outer corners, argues that the dedicatee is Jupiter Victor.¹³ I would add that the seated pose of the cult statue in the bronze reverse types would be iconographically consistent with our reverse type 4.V, which is die linked to our 4.III. The dimensions of the representations of the octastyle temple, depicted both in our *aurei* and, with colonnades, in the bronze coins, are very similar. The variations in architectural details such as *acroteria* and cult statues could well have been dictated by the constraints of space. Or, given that plans for the temple were probably revised during its construction, it would be reasonable to propose that our coin, 4.III, represents a preliminary plan for a new temple, which changed over the course of the COS V period.

The reverse type on the bronzes, BMC 863–866 and 958, with which I associate our 4.III, has received much attention since the apparent representation of a temple with an enclosed forecourt is reminiscent of the layout of the imperial *fora* built by Trajan's predecessors; one might call to mind, as Packer does, Julius Caesar's temple to Venus Genetrix in his forum, Augustus's temple to Mars Ultor

13. Packer (1997, 134–135), following the lead of *RIC*, p. 285. Hill (1989, 33–36) also believes the temple with the colonnades was dedicated to Jupiter Victor, although his argument that it was located on the Palatine has many problems. His reference to numismatic *comparanda* of later coins under Elagabalus and Severus Alexander is mistaken, given that the temples in these are hexastyle and tetrastyle, respectively, and they are fronted by squared enclosures with different kinds of colonnades. Strack (1931, 149–154) sees the figure as male, but Mattingly (1936/1966, cii) and Boatwright (1987, 78, 92) see it as female, although the latter admits difficulty. Boatwright convincingly refutes the old argument that the temple was originally dedicated to Trajan himself in his lifetime.

in his, and Vespasian's temple to Pax in his.¹⁴ Given that construction on Trajan's forum was undertaken during the COS V period, Packer argues that the temple on this bronze issue represents the focal point of Trajan's forum. The bronze issue is enormously important, because the northwestern area of the forum, now under the Piazza Venezia, has never been excavated. Indeed, some have recently argued, based on corings taken from beneath modern buildings, that there was no temple in this location at all and that Trajan's forum ended just beyond where the famous column still stands.¹⁵ In his recent book on Trajan, Seelentag takes the bold step of excluding the temple entirely from his plan of the forum, accepting the conclusions of Meneghini that the surviving substructures north of the column are too small to have supported such a grand edifice.¹⁶ Packer, however, can point, as many others do, to a large Corinthian capital and to fragments of what must have originally been massive, monolithic granite columns.¹⁷ He also reviews the many records of material being hauled away from the site, from the Middle Ages to the twentieth century; for example, he points out that fifty-three cartloads of marble were removed between 1541 and 1543, which, along with dozens of similar mining operations over the centuries, may account for the lack of material in Meneghini's coring samples.¹⁸ Moreover, a passage from Aulus Gellius refers to the famous library of Trajan's forum as the *bibliotheca templi Traiani*, possibly clarifying the archaeological evidence, meager as it is, that a temple stood in the complex (Gell. NA 11.17.1).

Although many scholars believe that a temple indeed stood on the spot, another obstacle Packer must face, and which may pose more of a problem, is the considerable evidence that the temple was completed by Hadrian rather than by Trajan. The biographer of the *Historia Augusta* says that Hadrian refurbished many buildings in Rome, selflessly allowing the names of the original benefactors to remain in the dedicatory inscriptions. The one exception, according to the biographer, was the temple to Trajan (SHA, *Hadr.* 19.9). Multiple copies of a single inscription suggest that Hadrian did in fact lay claim to the dedication of a temple to Trajan and Plotina.¹⁹ Brickstamps, too, suggest a Hadrianic date of completion.²⁰ A papyrus from Egypt, dated to Hadrian's reign in 118 CE, refers to the mining of the kinds of huge, rare monolithic columns in grey granite that would have char-

14. Packer (1997, 261).

15. Meneghini (1998).

16. Seelentag (2004, 311 n. 7).

17. Packer (1997, 51).

18. Packer (1997, 19–51).

19. *CIL* 6.966 and 6.31215; see Packer (1997, 127 n. 31).

20. Davies (2000, 186).

acterized the temple.²¹ But at least one such monolith can be dated to Trajan: an inscription on a fragment of a massive column that formed, in its entirety, a monument to Antoninus Pius dates to 105 CE, implying that it was mined under Trajan for a different purpose but went unused until a generation later, when Antoninus Pius needed it.²² Overall, based on the new evidence of the die links in conjunction with previous studies, I would argue that Trajan's plan for his forum included a temple dedicated to Jupiter, but that it was finished by Hadrian, who rededicated it to Trajan himself.²³

The sub-series 4, with its emphasis on Jupiter, fits well with other evidence for Trajan's interest in that deity. Trajan's most famous epithet, *Optimus*, associated the emperor with Jupiter from the very start of his reign.²⁴ Reverse types of Jupiter also appeared on other bronze issues of the COS V period, most notably at BMC 842–846, which depict a triumphal arch topped by the six-horse chariot of Jupiter, multiple Victories, defeated giants, and inscribed with I.O.M., Jupiter Optimus Maximus. Mattingly argued that this arch was a part of Trajan's planned forum complex.²⁵ Literary sources also suggest the new prominence of Jupiter in this period. Pliny the Younger flattered the emperor with explicit comparisons to Jupiter in his famous panegyric, and Bennett has argued that Dio Chrysostom implicitly did the same in his orations before Trajan.²⁶ Pliny opens and closes his speech with a prayer to Jupiter as the god who chose Trajan to lead Rome. For Pliny, Trajan's divine favor was evident from early omens, such as when Trajan wandered onto the Capitol in 96 CE just as a throng of citizens was hailing Jupiter Imperator, so that Trajan appeared to be the object of their praise (Plin. *Pan.* 5.3–4; cf. 23.4). Moreover, Bennett argues that Dio Chrysostom's repeated mention of Zeus in one of his discourses on the ideal king places the sitting emperor on an equal plane:²⁷ just as Zeus foiled past evil kings who ruled by terror, greed, paranoia, treachery, and even idiocy, presumably Trajan will, too (Dio Chrys. *Or.* 2.75). With the numismatic evidence now in sharper focus, we find that both an issue of coins and

21. Peña (1989).

22. See Ward-Perkins (1976, 347–351). Ward-Perkins says it is possible that the temple was dedicated originally to divus Nerva or to some other member or members of Trajan's family.

23. Lancaster (1999, 426, 437–439) suggests that the late completion of the temple may be a result of the logistics of the construction of the forum: bulky materials would have to have been imported through the area north of the overall site, and so the column and other northern structures (if they existed; Lancaster admits the unresolved controversy) would have to have gone up last.

24. Plin. *Pan.* 88.8–9 explains that both Jupiter and Trajan are *optimi* because they so obviously surpassed their predecessors. Cf. Mattingly (1936/1966, lxx).

25. Mattingly (1936/1966, ci).

26. Bennett (1997, 65–71).

27. Bennett (1997, 67–71).

a temple—whether under construction or planned for construction—lingered in the background of Pliny's and Chrysostom's words.

SERIES 4: IMPERIAL THEMES: ABUNDANTIA, ARABIA, ALIMENTA

Series 4₂, once established through die links, also presents a previously unnoticed iconographical trend. Four of the five reverse types are similar in general appearance, with a single axial human figure defining the type. Three of these four figures are female personifications—*Libertas*, *Abundantia* (or *Ceres*), and *Arabia*—and the fourth reverse type shows the emperor posing in *adlocutio*, addressing an unseen army while dressed in full armor in much the same way as Augustus in the famous portrait from Prima Porta (on echoes of the *adlocutio* in the restored coinage, see below). The fifth reverse type in this sub-series 4₂ carries the familiar emperor in triumphal quadriga. This program of five reverse types helps us to understand Trajan's public ideology and the nature of the vaunted *Pax Romana*: while his military character is established with the *adlocutio* pose and the presence of the triumphal quadriga, these types are closely linked with simultaneous issues of the *Libertas* and *Abundantia*/*Ceres* types, which employ the largest numbers of obverse dies in the sample (24 and 25, respectively). A full exploration of the significance of these as imperial virtues is beyond the scope of this paper, but in simplistic terms, it is enough to point out that the combination in this subseries of a celebration of both military victory and the fruits of that victory demonstrate that the Trajanic conception of prosperity included conquest and the acquisition of new territory.²⁸

The newly acquired territory in question, based on the links found in the die study, was that of Arabia, which helps in dating this subseries. The reverse type of Arabia (4.X) has drawn the attention of a number of historians examining when and how Rome annexed the kingdom. Several pieces of evidence suggest that the kingdom was annexed by Rome soon after the death of King Rabbel II in 106.²⁹ Xiphilinus, the Byzantine epitomator of Cassius Dio and the sole literary source,

28. It is tempting to view the subseries 4₂, with its celebration of *Libertas*, in the light of Pliny's *Panegyric*. In *Pan.* 2.5, Pliny contrasts Trajan's dawning age with the despotism of Domitian, who fancied himself a "master and god" (*dominus et deus*). In an elision of the Jupiter theme of 4₁ and the theme of *Libertas* in 4₂, Pliny also claims that Trajan played Hercules to Domitian's Eurystheus when he performed one outrageous labor after another in his early career in the service of a despicable master; in this metaphor Trajan is both a son of Jupiter (cf. subseries 4₁) and a liberator (cf. subseries 4₂) (*Plin. Pan.* 14.5). For the concomitant restoration of coins of Galba shown as a *liberator* following Nero, see below.

29. The evidence is collected, with substantial overlap, at Negev (1977, 640–644), Bowersock (1983, 77–84), and Millar (1993, 92–97). Rabbel II's reign was long, having begun in 70.

records a series of evidently contemporaneous events. First, Aulus Cornelius Palma “subdued” Arabia and “made it subject to the Romans” (ἐχειρώσατο ... καὶ Ῥωμαίων ὑπήκοον ἐποιήσατο). Second, Trajan returned from the Second Dacian War and staged magnificent games. Third, Trajan melted down and restruck worn coins.³⁰ Palma’s tenure as legate of Syria has been dated to 104/5–107/8, based on an inscription honoring his triumphal ornaments and his second consulship in 109.³¹ Papyrus letters from a soldier, Julius Apollinaris, reveal that the *legio III Cyrenaica*, which had been previously stationed in Egypt, was part of Palma’s occupying army.³² One letter shows that Bostra was in Roman hands by March 107; another reveals that Roman soldiers were at work on a large stone structure, possibly a road or a camp, by February 108.³³ Moreover, a Roman governor of the new province, Claudius Severus, is attested as early as 107 and as late as 115.³⁴ With respect to the date of our 4.X coins, Bowersock followed Strack in assuming a relatively late minting in the years identified as COS V, arguing that since the type was carried into COS V DES VI and beyond, it must have come in the final year of the period, or 111 CE.³⁵ Assuming the coins were minted in 111, Bowersock believed that there was a deliberate lag between the actual annexation and its public celebration in Rome, positing an effort on the part of the emperor to maintain “five years of public silence” in order to avoid “interference” by a rival.³⁶ I would suggest that the coin and the subseries to which it belonged can be dated earlier in COS V and closer in time to the actual event, given its far-ranging die links, its seemingly enormous and long-lived issue, and its relationship to “restored” coins following the reform of c. 107 CE (discussed below). This would obviate the argument concerning any potential trepidation or restraint on Trajan’s part in drawing attention to Arabia. In any case, an accomplishment that required two movements of troops, from both Syria and Egypt, would have been difficult to conceal.

30. Arabia: Xiph. 232, 28–234, 16; return from Dacia: Xiph. 234, 16–20; melting of coins: Xiph. 234, 20–22. These are collected in the Loeb edition as Cass. Dio 68.14.5–15.3. Cf. Amm. Marc. 14.8.3, which is also vague.

31. Millar (1993, 93); see Dessau 1023.

32. Bowersock (1983, 81), Millar (1993, 93).

33. Bowersock (1983, 80), Millar (1993, 95).

34. Bowersock (1983, 83), Millar (1993, 93, 96). Millar (1993, 97) also speculates that evidence for a census of Arabia in 127 indicates that the initial reckoning of the area by the Romans may have occurred in 107, if one were to work backward at ten-year intervals.

35. Bowersock (1983, 82–83); cf. Strack (1931, 194). Bowersock also points to the first milestones from the great Via Nova Traiana in Arabia, which date to 111. See also Negev (1977, 646) and Millar (1993, 94).

36. Bowersock (1983, 83–84). He is followed by Bennett (1997, 176). On the Roman coins minted in Arabia following annexation, see Metcalf (1975).

The die links of Series 4₃, suggesting a devoted issue of *aurei* with a unique set of obverse dies, demonstrate the importance of the *alimenta* program to Trajan's self-representation, although they do not, independently, establish a precise date. The series of three types is actually more like a single type with a couple of slight variants; what is common among them all is the figure of Trajan overseeing a group of children, and the scene comes either with or without Roma kneeling alongside. The image was also current in the so-called *anaglypha Traiani*, in which a statue of Trajan receiving a woman and her children overlooks the principal scene of Hadrian burning the accounts in the forum.³⁷ Two famous inscriptions from Campania and Apulia reveal the workings of the program: low-interest loans were made available by the emperor to agricultural communities, and over time the debtors would return principal to the fisc yet pay their interest into a common fund that supported the children of that community; different levels of assistance were available to children depending on their sex and the marital status of their parents.³⁸ As for dating these coins, we have already seen that the *alimenta* was a prominent theme on coins of the COS V DES VI and COS VI eras, and so it must have been prevalent in the later stages of COS V, too. The question remains, however, over when the *alimenta* issues first appeared. Hill argued the issues with REST ITAL in exergue came first, in 110, followed by those that read ALIM ITAL, in 111, but this scenario is made unlikely given the shared obverse dies among them all.³⁹ Mattingly argued that Strack was too early in tying the issue to Trajan's *decennalia* in 106 and instead dated it to 109.⁴⁰ Notably, the program itself was already well under way by the time of its representation on the coins: the inscription from Macchia in Campania, the earliest evidence for the Trajanic *alimenta*, dates to 101.⁴¹

DIE LINKS IN SERIES 3

The obverse die links of Series 3 are very different from those of Series 4. While they are fairly common *within* reverse types, they are very rare *across* reverse types. The only exception is a cluster of four reverse types—3.IXb, 3.X, 3.XI, and 3.XII—which orbit around the much larger issue 3.IX (see Table 7). Type 3.IX and its minor variant, 3.IXb, are of an oak wreath, and the other types linked by shared obverse dies are of Jupiter enthroned, Hercules sacrificing at an altar, and an eagle perched on a thunderbolt. Of course, all of these are present in subseries 4₁, de-

37. Hill (1970, 38); Seelentag (2004, 475–478). For the *anaglypha*, see Torelli (1982, 91, with plate IV.7).

38. *CIL* 9.1455 and 11.1147. See Duncan-Jones (1982, 288–319, esp. 290–293).

39. Hill (1970, 39).

40. Mattingly (1936/1966, lxxviii).

41. Bennett (1997, 81–82).

scribed above. It would appear that these reverse types were in use just before the change of legends from Series 3 to those of Series 4 and that the types were carried over. Accordingly, these coins are grouped together as a separate subseries 3₂. Significantly, the only reverse type from subseries 4₁ that is not in the earlier subseries 3₂ is of the octastyle temple, suggesting the planning of the temple might be dated to the shift from Series 3 to Series 4.

With respect to the many other coins of Series 3, there is only one obverse die that is shared between two reverse types. It links 3.VII with 3.VIII, which are, respectively, the reverse types of Trajan standing with a foot on the head of a Dacian and of a statue of Hercules with a club in his left hand.⁴² Otherwise, as seen in Table 6, there are no obverse die links among the different reverse types. Nevertheless, there is a clear thematic continuity in the iconography of these remaining Series 3 coins, in that most of them allude directly to the Dacian wars; on this basis, I would suggest that these specimens illustrate a distinct subseries 3₁.

The most common reverse type is of Trajan on the back of a rearing horse as he prepares to slay a fallen Dacian (3.VI). As with the *alimenta* images of Series 4₃, this type may reflect contemporary monumental sculpture. Similar images appear throughout Trajan's column, including the scene of Decebalus's suicide, as well as in a metope on the victory monument at Adamklissi in Dacia.⁴³ Hill argued that the coins and monuments reflect a statue group, now lost, which might have stood on the spina in the Circus Maximus, which Trajan also renovated in the period of COS V.⁴⁴ Given the large number of obverse dies in evidence for this reverse type (22), it seems reasonable to speculate that the coins were struck in tandem with the dedication of such a statue. But it is also possible that the type is generic: Stewart suggests Roman artists were adapting the pose from the Attalid monument in Athens.⁴⁵

REFORM, RESTORATION, AND POSSIBLE DATES

The relative sequence of the three subseries of Series 4 is determined principally by iconographical similarities with reverse types from *aurei* that came either earlier or later than Series 4. The themes of subseries 4₂ and 4₃, including, respectively, Arabia and the *alimenta*, occur in the next phases of Trajan's titulature, COS V DES VI and COS VI, and it thus makes sense to place them in close temporal proximity (see above, note 6). It remains possible that subseries 4₂ and 4₃ ran concurrently

42. On the identity of this Hercules, see Mattingly (1936/1966, lxviii–lxix).

43. On Trajan's column, scene 145 depicts the suicide. See Stewart (2004, 173–174). On the Adamklissi monument, see metope VI in Florescu (1959, 277).

44. Hill (1989, 70–71).

45. Stewart (2004, 173–174); note especially figure 197.

rather than sequentially, as products of different *officinae* that were operating simultaneously, turning out different reverse types specifically assigned to them. The theme of subseries 4₁ resembles that of subseries 3₂, and so it dates to an earlier period than subseries 4₂ and 4₃. Moreover, subseries 4₁ is the only one to include the undraped with aegis portrait style, which was present in earlier legend combinations (see Table 3).

Specific dates will probably never be completely secure, but further help can be gained from comparison of the various subseries, especially 4₂ and 4₃, with the reform of the mint in 107 and the concomitant restoration of coins featuring earlier Republican and imperial types.⁴⁶ By reissuing coins from the past, Trajan was able to create an impression of his predecessors and to shape his own *persona* in relation to them. In an early study, Mattingly noted that the selection of old types and the decision making about their reuse was a dynamic process. At times, old coins were repeated just as they originally appeared; for example, a coin with the bust of Tiberius on the obverse and a portrait of Livia as Pax on the reverse is repeated under Trajan without alteration (other than the new legend, IMP CAES TRAIAN AUG GER DAC P P REST).⁴⁷ But sometimes a bust is coupled with a reverse type from another emperor's reign; for example, Claudius appears on the obverse of a coin with *Concordia* on the reverse, an image that is only in evidence for the coins of Nero and Vitellius, and a bust of Vespasian is matched with an image used exclusively by his son, Titus—that of a thunderbolt atop a throne.⁴⁸ Portraits of “bad” emperors disappear entirely: Caligula, Nero, Otho, Vitellius, and Domitian are excluded from the restorations.

Seelentag has associated the restored coins with certain regular issues of COS V as contemporary. Foremost, Seelentag notes that our type 4.VIII, that of *Liber-tas*, is a nearly exact imitation of a coin both frequently attested for Galba and restored after the reform under Trajan.⁴⁹ Seelentag also notes that the type of Arabia, our 4.X, has an affinity with another restored coin (a *denarius*), this time from the Republic: the original, struck in 58 BCE, showed the king Aretas of Arabia kneeling with a branch in one hand and the reins of a camel in the other; it presumably commemorated the victory of Marcus Aemilius Scaurus in 63.⁵⁰ Seelentag's ob-

46. Mattingly (1926, 266), Komnick (2001, 175–178), Seelentag (2004, 414–415). The date of the reform is based on references in the Byzantine epitome by Xiphilinus, who associated it with the end of the Second Dacian War and the annexation of Arabia, discussed above.

47. Mattingly (1926, 261); see *BMC* (p. 144, no. 6).

48. Mattingly (1926, 262–263); for Claudius, see *BMC* 700; for Vespasian, see *BMC* 703.

49. For Galba, see *BMC* 176; for Trajan, see *BMC* 701; cf. Seelentag (2004, 469–470).

50. *BMC* (p. 140, no. 25 in Rome); see Seelentag (2004, 431–435); cf. Mattingly (1926, 248). See also *RRC* 422 and Hollstein (1993, 249–255).

servations concerning the similarities among these coins—Trajan's own *Libertas* and Arabia types, both of subseries 4₂, on the one hand, and the *Libertas* of Galba and the victory over Arabia from the Republic on the other—suggest that they were all minted around the same time. I would add to Seelentag's observations that the other side of the restored *denarius* celebrating the defeat of Arabia shows Jupiter in a quadriga, much like our type 4.VI, also of subseries 4₂. Moreover, the remaining two types in our 4₂ subseries, the emperor's *adlocutio* and the image of *Abundantia*/Ceres, are similar in pose and aspect to the restored *aureus* depicting Venus Victrix on the reverse and a bust of Julius Caesar on the obverse and the restored *denarius* depicting Diana Lucifera with an obverse bust of Apollo, respectively.⁵¹ All of the reverse types of the subseries 4₂ thus may be correlated, in some cases explicitly so, with restored coins, which are dated to c. 107. By contrast, none of the coins of our subseries 4₁ (Jupiter theme) or 4₃ (*alimenta* theme) has any obvious match in the batch of restored coins. Subseries 4₂ is thus characterized not only by a systematic organization of die links and the first instance of using a single portrait style, but also by echoes in newly resurrected coins from the past. In general, as Mattingly has argued, the prominence of *Libertas* in subseries 4₂ is also in keeping with the explicit reminiscences of the old Republic in the numismatic restoration.⁵² It is thus reasonable to speculate that we are witnessing the effects of the reform mentioned briefly by Dio's epitimator when we see the shift from subseries 4₁ to subseries 4₂, rather than, as argued by Strack, Mattingly, and Hill, when the legends changed from Series 3 to Series 4.⁵³ As far as dating goes, this suggests that our Series 1 through 4₁ were minted in the years up to 107 with subseries 4₂ and 4₃ coming in 108 and after.

CONCLUSIONS

I have stopped short of assigning dates to the various issues, because I acknowledge that precise timing of the reform of the mint is not wholly secure and more research is necessary to explore the implications of the die study of the *aurei* for the issues in silver and bronze. But some firm conclusions take us a great distance before the next inquiry. First, the use of portrait styles as a dating mechanism is revealed as fraught with provable inconsistencies. Second, issues from the mint seem to have been systematically planned around particular themes, rather like U.S. postage stamps today, and sets of dies were kept together and used together throughout the issue's manufacture. Whether the subseries outlined above reflect sequential issues or the parallel production of different *officinae* cannot be deter-

51. Venus and Caesar: BMC 696; Diana and Apollo: BMC 691.

52. Mattingly (1936/1966, xc).

53. Strack (1931, 29), Mattingly (1936/1966, lx), Hill (1970, 36–37).

mined from the die study of the *aurei*; that is, one could postulate either based on the limited evidence presented here. Nevertheless, the iconographic programs found on *aurei*—the standard, generic images of a conqueror of a foreign land, the association of the emperor with Jupiter, and the more complex comment on the relationship between military power and prosperity—can be assigned tentative dates and can be used as guides in understanding the more varied, even different, programs found on other denominations in silver and base metal.

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CATALOGUE

The following catalogue outlines the die links, both obverse and reverse, which were found to exist among the four series of COS V legend combinations of Table 1. Within each series, individual reverse types have been given a Roman numeral corresponding with the designations in Table 2. Under each reverse type, sequential Arabic numerals identify particular combinations of obverse and reverse dies. Individual coins exemplifying these die combinations are entered under lowercase letters. A key is as follows:

Series #

I. Reverse type

1. Obverse die # – Reverse die

a. First coin illustrating the combination

b. Second coin illustrating the combination, etc.

All of the die links are represented graphically in Tables 4 to 10, which may assist the reader in visualizing the connections and groupings.

For many of the coins in the catalogue, the identifying information is taken from the American Numismatic Society's card file of past auction catalogues. In cases where the cards are difficult to read or incomplete, I have given as much as can be known from this source.

Obverse and Reverse Dies

The obverse dies within each legend combination are designated with sequential Arabic numerals. The reverse dies within each legend combination are designated

by that type's Roman numeral in lowercase letters followed by a sequential Arabic numeral. Obverse dies that are marked with an asterisk (*) are those that appear with more than one reverse type. Brackets surrounding the obverse die number indicate the portrait style of the die, which previous scholars saw as important in identifying trends in COS V coinage (but see the article above). The following chart describes the portrait styles associated with each type of bracket:

- { } Undraped, without aegis
- () Undraped, with aegis
- [] Draped, without cuirass
- < > Frontal view (fairly rare)

An absence of brackets indicates that the portrait is "Draped, with cuirass" (by far the most common).

All of the obverse and reverse dies are illustrated in the plates. Coins whose dies are illustrated are marked by "(obv. ill.)" or "(rev. ill.)."

Series 1

Obverse legend: IMP CAES NERVA TRAIAN AVG GERM

Reverse legend: DACICUS COS V PP

I. Trajan riding l. in a quadriga

1. {1} – i.1
 - a. BMC 142 (obv. ill.) (rev. ill.)
- II. Dacian seated r. on the ground

1. {2} – ii.1
 - b. Vienna, 7.924 (obv. ill.) (rev. ill.)

Series 2

Obverse legend: IMP NERVA TRAIANUS AVG GER DACICUS

Reverse legend: PM TR P COS V PP

I. Trajan riding l. in a quadriga

1. (1) – i.1
 - a. Vienna, 7.235 (obv. ill.)
 - b. Hess-Leu, April 2, 1958, #315, pl. 12
 - c. Ball, FPL 39, 1937, #1336
2. (2)* – i.1
 - a. Sotheby's, January 28, 1976, #88 (obv. ill.)
3. {3} – i.1
 - a. Vienna, 7.923 (obv. ill.) (rev. ill.)

4. (2)* – i.2
 - a. Frankfurter Münzhandlung, Nr. 123, March 8–9, 1976, #160 (rev. ill.)
 5. {4} – i.2
 - a. BMC 155, pl. 12.3 (obv. ill.)
 6. (5) – i.3
 - a. Glasgow 49, pl 2 (obv. ill.) (rev. ill.)
 7. {6} – i.3
 - a. Liberchies Hoard, 190 (obv. ill.)
- II. Dacian seated r. on the ground
1. (7) – ii.1
 - a. Erla Hoard, 369 (obv. ill.) (rev. ill.)
 2. (2)* – ii.2
 - a. Corbridge Hoard, 60 (rev. ill.)

Series 3

Obverse legend: IMP TRAIANO AVG GER DAC PM TR P COS V PP

Reverse legend: SPQR OPTIMO PRINCIPI (one variant, type IXb, abbreviates the last word to PRINC)

On the division of the series into subseries 3₁ and 3₂, see the article above.

Series 3₁

- I. Roma standing with l. foot on the head of a Dacian
 1. {1} – i.1
 - a. BMC 229 (obv. ill.) (rev. ill.)
- II. Dacian seated r. on the ground
 1. {2} – ii.1
 - a. Malloy, FPL Fall 1982, #91 (obv. ill.) (rev. ill.)
- III. Female figure standing r., emptying a cornucopia
 1. {3} – iii.1
 - a. BMC 229 (obv. ill.) (rev. ill.)
 2. {4} – iii.1
 - a. ANS 1001.57.4894 (obv. ill.)
 3. {5} – iii.2
 - a. Vienna, 8012 (obv. ill.) (rev. ill.)
- IV. Senator standing r. and Dacian kneeling r., facing Trajan
 1. {6} – iv.1
 - a. BMC 244 (obv. ill.) (rev. ill.)
 2. (7) – iv.2
 - a. Vinchon, May 6–7, 1955, #334 (obv. ill.) (rev. ill.)

3. {8} – iv.3
 - a. Glendining, February 20, 1951, #1739 (obv. ill.) (rev. ill.)

V. Trajan riding l. in a quadriga

1. {9} – v.1
 - a. *BMC* 247
 - b. Vienna, 8021 (obv. ill.) (rev. ill.)
2. (10) – v.2
 - a. *BMC* 248 (obv. ill.)
 - b. Corbridge Hoard 77
3. [11] – v.2
 - a. Liberchies Hoard, 203
 - b. Hamburger, October 19, 1925, #812 (rev. ill.)
 - c. *BMC* 249
 - d. Vienna, 8023 (obv. ill.)
4. <12> – v.2
 - a. Vinchon, May 2–4, 1973, #540
 - b. Vienna, 8022 (obv. ill.)

VI. Trajan riding on horseback, attacking a fallen Dacian

1. {13} – vi.1
 - a. Corbridge Hoard 78 = *BMC* 245 (obv. ill.) (rev. ill.)
2. (14) – vi.2
 - a. Diyarbakır Hoard, 157 (obv. ill.)
3. 15 – vi.2
 - a. Hess, November 24, 1937, #101 (obv. ill.) (rev. ill.)
4. (16) – vi.3
 - a. ANS 1958.214.9 (obv. ill.) (rev. ill.)
 - b. Vienna, 7.993
5. (17) – vi.4
 - a. Hamburger, May 29, 1929, #598 (obv. ill.) (rev. ill.)
6. (18) – vi.5
 - a. Liberchies Hoard, 205 (obv. ill.)
7. 19 – vi.5
 - a. Baranowsky, February 25, 1931, #1720 (obv. ill.) (rev. ill.)
8. (20) – vi.6
 - a. Vienna, 7.995 (obv. ill.)
 - b. J. Schulman, June 8–10, 1966, #1730
 - c. Münzzentrum Köln, April 27–30, 1977, #109
9. 21 – vi.6
 - a. Naville 2, June 12, 1922, #650 (obv. ill.) (rev. ill.)

10. (20) – vi.7
 - a. Erla Hoard 455 = Vienna, 88.262
11. (22) – vi.7
 - a. Liberchies Hoard, 204
 - b. Münzhandlung, December 1969, #14 (obv. ill.)
12. [23] – vi.7
 - a. Santamaria 1950, Magnaguti 3, #12 [exact date not provided in the ANS card file] (obv. ill.) (rev. ill.)
13. [24] – vi.7
 - a. BMC 246
14. [24] – vi.8
 - a. Liberchies Hoard, 206
 - b. Vienna, 7.994 (obv. ill.) (rev. ill.)
15. [25] – vi.9
 - a. Sotheby's, November 19, 1902, #110 (obv. ill.)
16. [26] – vi.9
 - a. Münzhandlung Basel 6, March 18, 1936, #1672 (obv. ill.) (rev. ill.)
17. [27] – vi.10
 - a. Rollin & Feuadent, May 27, 1889, #337 (obv. ill.) (rev. ill.)
18. (28) – vi.11
 - a. Hess, May 9, 1951, #101 (obv. ill.)
19. 29 – vi.11
 - a. Santamaria, FPL July 1934, #456 (obv. ill.) (rev. ill.)
20. 30 – vi.11
 - a. ANS 1001.1.7882 (obv. ill.)
 - b. Liberchies Hoard, 207
21. 31 – vi.12
 - a. Glasgow 74 (rev. ill.)
22. 31 – vi.13
 - a. Vinchon, November 17, 1958, #111
 - b. M. Ratto, January 19, 1956, #121 (obv. ill.) (rev. ill.)
23. 32 – vi.13
 - a. Vinchon, May 6–7, 1955, #333 (obv. ill.)
24. 33 – vi.14
 - a. Naville 2, June 12, 1922, #649 (rev. ill.)
25. 33 – vi.15
 - a. M. Ratto, January 19, 1956, #122 (obv. ill.) (rev. ill.)
26. 34 – vi.16
 - a. Vienna, 36.6310 (obv. ill.) (rev. ill.)

VII. Trajan standing with l. foot on the head of a Dacian

1. {35} – vii.1
 - a. *BMC* 242 (obv. ill.) (rev. ill.)
2. [36] – vii.2
 - a. Szöny, 58 (obv. ill.)
3. [37] – vii.2
 - a. Corbridge Hoard 75 = *BMC* 243 (obv. ill.)
4. 38* – vii.2
 - a. Vienna, 7.992 (obv. ill.) (rev. ill.)

VIII. Statue of Hercules with a club in his l. hand

1. 38* – viii.1
 - a. Bourgey, March 27, 1912, #29 (rev. ill.)

Series 3,

IX. Wreath encircling legend

1. (39) – ix.1
 - a. Bourgey, June 17–18, 1974, #119
 - b. Kastner 4, November 27–28, 1973, #232 (obv. ill.) (rev. ill.)
2. 40 – ix.2
 - a. Stack's, October 5, 1960, #103 (obv. ill.)
3. 41* – ix.2
 - a. ANS 1954.256.14 (obv. ill.)
 - b. Liberchies Hoard, 200
4. 42 – ix.2
 - a. Erla Hoard, 438
 - b. Erla Hoard, 441 = Vienna, 88.261 (obv. ill.) (rev. ill.)
 - c. Didcot, 44
5. 43 – ix.3
 - a. Vienna, 7.969 (obv. ill.)
 - b. R. Ratto, February 8, 1928, #2622
6. 44 – ix.3
 - a. A. E. Cahn, November 26, 1930, #355
 - b. Schlessinger, January 31, 1939, #553
 - c. Erla Hoard 440 = Vienna, 88.260 (obv. ill.)
7. 45 – ix.3
 - a. Liberchies Hoard, 201 (obv. ill.)
8. 46 – ix.3
 - a. ANS 1001.1.22179 (obv. ill.) (rev. ill.)
9. 46 – ix.4
 - a. Mazzini, 581 (rev. ill.)

10. 47 – ix.5
 - a. Glendining, February 20, 1951, #1742 (obv. ill.) (rev. ill.)
 - b. Naville 8, June 25, 1924, #849
11. 48 – ix.6
 - a. Canessa 3, June 28, 1923 (Caruso Coll.), #295 (obv. ill.) (rev. ill.)
12. 49 – ix.7
 - a. Glasgow 85 (obv. ill.)
13. 50 – ix.7
 - a. BMC 256 (obv. ill.) (rev. ill.)
14. 51 – ix.8
 - a. BMC 253 (obv. ill.)
15. <52> – ix.8
 - a. Sotheby's, July 6, 1921, #29 (obv. ill.) (rev. ill.)
16. 53 – ix.9
 - a. Ars Classica 15, July 2, 1930, #1525 (obv. ill.)
17. <54> – ix.9
 - a. Sakha Hoard, 28 (photo of W. E. Metcalf)
 - b. ANS 1001.1.22124 (obv. ill.)
18. 55 – ix.9
 - a. Hess, May 9, 1951, #103 (obv. ill.) (rev. ill.)
19. 56 – ix.10
 - a. MMAG 35, June 16–17, 1967, #49 (obv. ill.)
 - b. Sangiorgi, April 15, 1907 (Strozzi Coll.), #1885 (rev. ill.)
20. 57 – ix.10
 - a. Helbing 70, December 9, 1932, #84
21. 57 – ix.11
 - a. Erla Hoard, 439
 - b. Bourgey, December 1, 1966, #20 (rev. ill.)
 - c. Santamaria 1950, Magnaguti 3, #20 [exact date not provided in the ANS card file]
22. 57 – ix.12
 - a. Ars Classica 15, July 2, 1930, #1524
 - b. Corbridge Hoard 73–74(?) = BMC 254 (obv. ill.)
23. 58 – ix.12
 - a. Coin Galleries, April 29, 1976, #4
 - b. Egger 39, January 15, 1912, #891 (obv. ill.) (rev. ill.)
24. 59 – ix.13
 - a. BMC 255 (obv. ill.) (rev. ill.)
25. 60 – ix.14
 - a. BMC 252 (obv. ill.) (rev. ill.)

IX.b Wreath encircling legend, variant PRINC for PRINCIPI

1. 61* – ix.b.1

a. R. Ratto, May 12, 1925, #1072 (rev. ill.)

2. 62* – ix.b.2

a. Platt, March 17–18, 1970, #47 (obv. ill.) (rev. ill.)

X. Hercules standing l., sacrificing at an altar

1. 61* – x.1

a. Vienna, 7.990 (obv. ill.) (rev. ill.)

2. 41* – x.2

a. Glasgow 60 (rev. ill.)

XI. Eagle perched on a thunderbolt

1. 61* – xi.1

a. Glasgow 83 (rev. ill.)

2. 63 – xi.2

a. Vienna, 7958 (obv. ill.) (rev. ill.)

XII. Jupiter enthroned l.

1. 62* – xii.1

a. Liberchies Hoard, 202 (rev. ill.)

2. 62* – xii.2

a. Didcot, 43 (rev. ill.)

*Series 4**Obverse legend:* IMP TRAIANO AVG GER DAC PM TRP*Reverse legend:* COS V PP SPQR OPTIMO PRINCOn the division of the series into subseries 4₁, 4₂, and 4₃, see the article above.*Series 4₁*

I. Hercules standing l. sacrificing at an altar

1. 1 – i.1

a. Hess-Leu, April 12–13, 1962, #458 (obv. ill.) (rev. ill.)

2. 2 – i.2

a. Baranowsky Cuzzi, 1929, #588 [exact date and collection not provided in the ANS card file; printed text is faint and unclear] (obv. ill.) (rev. ill.)

3. 3* – i.3

a. BMC 263 (rev. ill.)

4. 4* – i.4

a. MMAG 15, July 1–2, 1955 (rev. ill.)

5. 5 – i.4

a. Vienna, 7.989 (obv. ill.)

II. Wreath encircling reverse legend

1. (6) – ii.1
 - a. Liberchies Hoard, 199 (obv. ill.) (rev. ill.)
2. (7) – ii.2
 - a. Vienna, 7.967 (obv. ill.) (rev. ill.)
3. 8* – ii.3
 - a. Vienna, 7.968 (obv. ill.) (rev. ill.)
4. 4* – ii.4
 - a. Glasgow 123 (obv. ill.) (rev. ill.)
5. 4* – ii.5
 - a. BMC 371 (rev. ill.)
6. 9 – ii.6
 - a. BMC 372 (obv. ill.) (rev. ill.)
 - b. Münzhandlung Basel 6, March 18, 1936, #1658
 - c. Corbridge Hoard, 71
7. 10 – ii.6
 - a. M. Ratto, 1912, #1479 [exact date not provided in the ANS card file] (obv. ill.)
8. 11 – ii.6
 - a. Baranowsky Cuzzi, 1929, #592 [exact date and collection not provided in the ANS card file; printed text is faint and unclear] (obv. ill.)
9. 12 – ii.6
 - a. Hess, November 24, 1937, #96 (obv. ill.)

III. Octastyle temple

1. 4* – iii.1
 - a. Glendining, February 20, 1951, #1727 (rev. ill.)
 - b. BMC 354
 - c. ANS 1001.1.22272
 - d. Vienna, 8025
2. 3* – iii.2
 - a. G. Hirsch 3, April 26, 1954, #355 (rev. ill.)
- 13 – iii.2
 - a. ANS 1967.153.137 (obv. ill.)
- 14 – iii.3
 - a. Glasgow 118 (obv. ill.)
5. (15)* – iii.3
 - a. Didcot, 49
 - b. Vienna, 8026 (obv. ill.) (rev. ill.)
 - c. Galerie für Griechische, Römische und Byzantinische Kunst (Frankfurt/Main) FPL 1, 1970, #124

IV. Eagle perched on a thunderbolt

1. 8* – iv.1
 - a. Vienna, 7957
 - b. Corbridge Hoard, 65 = *BMC* 352
2. 16* – iv.1
 - a. G. Hirsch 12, April 25–27, 1957, #329 (rev. ill.)
 - b. *BMC* 353
3. 17 – iv.2
 - a. Glasgow 116 (obv. ill.) (rev. ill.)
 - b. Didcot, 48
4. 18 – iv.3
 - a. Hirsch 14, November 27, 1905, #1047 (obv. ill.) (rev. ill.)
5. 3* – iv.4
 - a. *Ars Classica* 17, October 3, 1934, #756 (rev. ill.)
6. 3* – iv.5
 - a. MMAG 13, June 17–19, 1954, #677 (rev. ill.)
 - b. J. Schulman, November 19, 1968, #371 (obv. ill.)
 - c. Bourgey, February 23–25, 1970, #119
7. 3* – iv.6
 - a. Sangiorgi, April 15, 1907 (Strozzi Coll.), #1877 (rev. ill.)
 - b. *BMC* 351
 - c. Mazzini, #96v
8. 19 – iv.6
 - a. Florange, June 14, 1923, #21 (obv. ill.)
 - b. Liberchies Hoard, 198

V. Jupiter enthroned, l.

1. 16* – v.1
 - a. *BMC* 264 (obv. ill.)
 - b. Leu 10, May 29, 1974, #133 (rev. ill.)
2. 20 – v.1
 - a. J. Schulman, June 8–10, 1966, #1728 (obv. ill.)
3. 21 – v.1
 - a. ANS 1958.214.12 (obv. ill.)
4. 22 – v.1
 - a. Vienna, 7.998 (obv. ill.)
5. 3* – v.2
 - a. Egger 45, November 12, 1913, #1013
6. (15)* – v.3
 - a. Hess, May 9, 1951, #92

Series 4,

VI. Trajan riding l. in a quadriga

1. 23 – vi.1

a. Salton-Schlesinger [18], October 18, 1952, #29 (obv. ill.) (rev. ill.)

2. 24* – vi.2

a. Naville 8, June 25, 1924, #815

b. Glasgow 115 (obv. ill.) (rev. ill.)

c. Vienna, 8.016

VII. Trajan standing r. with a spear on l. shoulder (“*adlocutio*”)

1. 25 – vii.1

a. Corbridge Hoard 64 = BMC 348 (obv. ill.) (rev. ill.)

2. 26* – vii.2

a. Sotheby’s (London), September 28, 1973, #40 (obv. ill.) (rev. ill.)

3. 24* – vii.3

a. Santamaria, March 13, 1953, #25

b. BMC 347

c. Liberchies Hoard, 195

d. Vienna, 7.991 (rev. ill.)

4. 27* – vii.4

a. Superior, June 17–23, 1974, #50 (obv. ill.) (rev. ill.)

5. 28 – vii.5

a. Bourgey, March 16, 1913, #209 (obv. ill.) (rev. ill.)

6. 29 – vii.6

a. Santamaria 1950, Magnaguti 3 [exact date not provided in the ANS card file] (obv. ill.) (rev. ill.)

7. 30* – vii.6

a. R. Ratto, May 12, 1925, #1050

8. 31 – vii.7

a. Florange, February 10, 1923, #123 (obv. ill.) (rev. ill.)

9. 32* – vii.8

a. Egger 41, November 18, 1912, #1188 (rev. ill.)

10. 33* – vii.8

a. Sotheby, May 4, 1908, #266

b. Glasgow 111 (obv. ill.)

c. Ball, FPL 39, 1937, #1335

d. Liberchies Hoard, 197

11. 34* – vii.8

a. Liberchies Hoard, 196

VIII. *Libertas* holding a pileus in r. hand and torch in l. arm

1. 35 – viii.1
 - a. Superior, August 19–23, 1975, #3068 (obv. ill.)
2. 26* – viii.1
 - a. Vienna, 7.999 (rev. ill.)
3. 36 – viii.2
 - a. Glasgow 97 (obv. ill.) (rev. ill.)
4. 37 – viii.3
 - a. M. Ratto, January 19, 1956, #114 (obv. ill.) (rev. ill.)
5. 38 – viii.3
 - a. BMC 312 (obv. ill.)
6. 39* – viii.4
 - a. Liberchies Hoard 194
7. 27 – viii.4
 - a. Ars Classica 18, October 10, 1938, #179 (rev. ill.)
8. 30* – viii.5
 - a. Coin Galleries, February 14, 1973, #468 (obv. ill.)
 - b. Schulman LXII, #684 [identity of Schulman not provided in ANS card file]
9. 40* – viii.5
 - a. Hess-Leu, April 16, 1957 (Jacob Hirsch Coll.), #357 (rev. ill.)
10. 40* – viii.6
 - a. Corbridge Hoard 61 = BMC 314 (obv. ill.) (rev. ill.)
11. 41* – viii.7
 - a. Helbing 70, December 9, 1932, #67 (obv. ill.) (rev. ill.)
12. 42 – viii.8
 - a. Coin Galleries, FPL 3, 1965, #31 (obv. ill.) (rev. ill.)
13. 33* – viii.9
 - a. Clerici(?), 1910, #762 [exact date and collection not provided in the ANS card file; printed text is faint and unclear] (rev. ill.)
14. 43* – viii.10
 - a. Cahn 28, November 26, 1930, #338 (rev. ill.)
15. 43* – viii.11
 - a. Santamaria, March 7, 1910 (Coll. Hartwig), #1244 (obv. ill.)
16. 44* – viii.11
 - a. Bourgey, 1911 (Coll. Chaboneau), #388 [exact date not provided in the ANS card file] (rev. ill.)
17. 45 – viii.11
 - a. Kress 158, November 8–9, 1973, #2050 (obv. ill.)

18. 46 – viii.12
 - a. H. Schulman (New York), March 18–21, 1964, #104 (obv. ill.) (rev. ill.)
 19. 47 – viii.13
 - a. Cahn 61, December 4, 1928, #830 (obv. ill.) (rev. ill.)
 - b. R. Ratto, February 8, 1928, #2532
 20. 48* – viii.14 (facing left)
 - a. Santamaria, January 24, 1938, #449 (obv. ill.) (rev. ill.)
 21. 49 – viii.15
 - a. Mazzini, 70v
 - b. Helbing 63, April 29, 1931, #585 (rev. ill.)
 - c. Schulman, March 5, 1923, #1182
 - d. Merkin [26], September 12, 1973, #17
 - e. NFA 10, September 17–18, 1981, #334 (obv. ill.)
 22. 50* – viii.16
 - a. Bourgey, March 10, 1976, F (rev. ill.)
 23. 23* – viii.17
 - a. BMC 313 (rev. ill.)
 24. 51* – viii.17
 - a. Ars Classica & Naville 12, October 18–23, 1926, #2834 (obv. ill.)
 25. 33* – viii.18
 - a. MMAG, FPL 200, May 1960, #19
 26. 32* – viii.18
 - a. Glasgow 96 (rev. ill.)
 - b. Erla Hoard 415 = Vienna, 88.259 (obv. ill.)
 - c. Stack's, March 5–6, 1971, #340
 - d. ANS 1001.1.30091
 27. 52* – viii.19
 - a. Sakha Hoard, 27 (photo of W. E. Metcalf) (rev. ill.)
- IX. *Abundantia* holding wheat in r. hand and torch in l. arm
1. 53 – ix.1
 - a. MMAG 15, July 1–2, 1955, #760 (obv. ill.)
 2. 39* – ix.1
 - a. Munzschat, April 6, 1974, #242 [exact collection not provided in the ANS card file] (obv. ill.) (rev. ill.)
 3. 54 – ix.2
 - a. Kress 161, October 29–31, 1974, #929
 - b. BMC 259 (obv. ill.) (rev. ill.)

4. 55 – ix.3
 - a. MünzZentrum (Cologne), April 24, 1974, #35 (obv. ill.) (rev. ill.)
5. 40* – ix.4
 - a. Malter, April 15–16, 1977, #768 (rev. ill.)
6. 41* – ix.5
 - a. Mazzini, 65v (rev. ill.)
7. 56 – ix.6
 - a. Bourgey, December 3, 1928, #277 (obv. ill.) (rev. ill.)
8. 57 – ix.6
 - a. Hess & Leu, April 7, 1960, #323 (obv. ill.)
9. 58 – ix.6
 - a. St. Gibbons, FPL 4 (no date, c. 1974), #2 (obv. ill.)
10. 42* – ix.7
 - a. MMAG 35, June 16–17, 1967, #52 (rev. ill.)
11. 42* – ix.8
 - a. J. Hirsch 22, November 25, 1908, #76 = ANS 1958.214.11 (rev. ill.)
12. 59 – ix.8
 - a. Liberchies Hoard, 192 (obv. ill.)
13. 33* – ix.9
 - a. Vienna, 36.683 (rev. ill.)
14. 60 – ix.10
 - a. Feuarent frères, June 16, 1924, #178 (obv. ill.) (rev. ill.)
15. 61 – ix.10
 - a. BMC 260 (obv. ill.)
16. 43* – ix.11
 - a. Ars Classica & Naville 12, October 18–23, 1926, #2833 (rev. ill.)
17. 62 – ix.12
 - a. Sakha Hoard, 25 = ANS 1958.214.10 (obv. ill.) (rev. ill.)
18. 44* – ix.13
 - a. Corbridge Hoard 67–70, pl. xv.7 = BMC 262 (obv. ill.) (rev. ill.)
19. 63 – ix.14
 - a. H. Christensen (New York), October 8, 1964, #7 (obv. ill.) (rev. ill.)
20. 48* – ix.15 (facing left)
 - a. Vinchon, October 26, 1964, #29 (rev. ill.)
21. 64 – ix.16
 - a. Glendining, January 14, 1953, #33
 - b. Coin Galleries FPL 4, September–October 1960, #G393 (obv. ill.) (rev. ill.)
22. 65* – ix.17
 - a. Vinchon, December 2–3, 1975, #206 (obv. ill.)
 - b. Sangiorgi, April 15, 1907 (Strozzi Coll.), #1878

- 23. 34* – ix.17
 - a. Corbridge Hoard 67–70, pl. xv.6 = *BMC* 261
 - b. Erla Hoard 380 = Vienna, 88.258 (obv. ill.) (rev. ill.)
- 24. 50* – ix.17
 - a. Santamaria, 24 Jan. 1938, #448
 - b. MMAG 6, December 6–7, 1946, #808
 - c. NFA 4, March 24–25, 1977, #578
 - d. Peus 279, March 14–17, 1972, #167
- 25. 50* – ix.18
 - a. Cahn 71, October 14, 1931, #1550 (rev. ill.)
- 26. 50* – ix.19
 - a. Vienna, 7.964 (obv. ill.) (rev. ill.)
- 27. 23* – ix.18
 - a. Liberchies Hoard, 193
- 28. 23* – ix.20
 - a. *BMC* 258 (rev. ill.)
- 29. 66 – ix.21
 - a. Didcot, 45 (obv. ill.) (rev. ill.)
- X. Arabia holding a branch in r. hand with a camel in l. field
 - 1. 67 – x.1
 - a. Hamburger, May 27, 1929, #960 (obv. ill.)
 - 2. 68 – x.1
 - a. Hamburger, October 19, 1925, #777 (obv. ill.) (rev. ill.)
 - 3. 69 – x.1
 - a. Vinchon, October 29–30, 1973, #19 (obv. ill.)
 - 4. 70 – x.1
 - a. Helbing, March 22, 1926, #269 (obv. ill.)
 - 5. 71 – x.2
 - a. MMAG 35, June 16–17, 1967, #53 (rev. ill.)
 - b. Corbridge Hoard 63 = *BMC* 296 (obv. ill.)
 - 6. 32* – x.3
 - a. Glasgow 90 (rev. ill.)
 - 7. 72 – x.3
 - a. *Ars Classica* 15, July 2, 1930, #1508
 - b. MMAG, FPL 231, April 1963, #51 (obv. ill.)
 - 8. 72 – x.4
 - a. *BMC* 294 (rev. ill.)
 - 9. 73 – x.4
 - a. Egger 41, November 18, 1912, #1187

- b. Leu & NFA, May 16–18, 1984 (Garrett Collection, I), #775 (obv. ill.)
- c. Hess, May 9, 1951, #93
- d. Didcot, 46
- e. Szöny, 48
- 10. 73 – x.5
 - a. Mazzini, #88v
- 11. 52* – x.5
 - a. Corbridge Hoard 62 = *BMC* 295 (obv. ill.) (rev. ill.)
 - b. Didcot, 47
- 12. 52* – x.6
 - a. Vienna, 33.685 (rev. ill.)
- 13. 48* – x.7
 - a. Vienna, 7960 (rev. ill.)
- 14. 32* – x.8
 - a. Rains Coll., May 29, 1911, #506 [exact collection unclear in the ANS card file; handwriting is difficult to read] (rev. ill.)
- 15. 65* – x.9
 - a. Galerie des Monnaies (Geneva), June 9, 1978, #1700
- 16. 65* – x.9
 - a. Santamaria, January 24, 1938, #451 (rev. ill.)
- 17. 34* – x.10
 - a. MMAG 13, June 17–19, 1954, #676 (rev. ill.)
- 18. 51* – x.11
 - a. Vienna, 38.609
 - b. Vinchon, May 6–7, 1955, #324
 - c. Vinchon, October 29, 1962, #24
- 19. 50* – x.11
 - a. Münzhandlung Basel 6, March 18, 1936, #1657 (rev. ill.)
- 20. 74 – x.12
 - a. Vienna, 7.959 (obv. ill.) (rev. ill.)

Series 4₃

- XI. Roma kneeling r. and children standing r., facing Trajan. In exergue:
ALIM ITAL
 - 1. 75* – xi.1
 - a. Sakha Hoard, 24 (photo of W. E. Metcalf) (rev. ill.)
- XII. Children standing r., facing Trajan. In exergue: ALIM ITAL
 - 1. 76 – xii.1
 - a. Vienna, 7.953 (obv. ill.)

- b. Morgenthau 375, April 7, 1937, #317 = ANS 1980.109.162
- c. Rollin & Feuarent, May 27, 1889, #329 (rev. ill.)
- 2. 75* – xii.1
 - a. Liberchies Hoard, 191
- 3. 75* – xii.2
 - a. Malter 25, 1970, #521 (rev. ill.)
- 4. 75* – xii.3
 - a. Rollin & Feuarent, May 26, 1909, #89 (obv. ill.)
- 5. 77 – xii.3
 - a. Mazzini, 15
 - b. Corbridge Hoard 72 = BMC 380 (obv. ill.)
- 6. 78* – xii.3
 - a. MMAG 43, November 12–13, 1970, #330 (obv. ill.)
 - b. Helbing 63, April 29, 1931, #580
- 7. 79* – xii.3
 - a. Glendining, February 20, 1951, #1723 (obv. ill.) (rev. ill.)
 - b. Raymond, December 19, 1938, #88 = Raymond, June 20, 1939, #6
 - c. Frankfurter Münzhandlung 121, Jan. 1974, #39 [auction information unclear in the ANS card file]
- 8. 80 – xii.4
 - a. MMAG FPL 250, 1964/5, #119 (obv. ill.) (rev. ill.)
- 9. 81 – xii.4
 - a. Vienna, 7.954 (obv. ill.)
- 10. 82 – xii.5
 - a. Sangiorgi, April 15, 1907 (Strozzi Coll.), #1876
 - b. Coin Galleries FPL 17, February–March 1959, #G336
 - c. Vienna, 7.995 (obv. ill.)
- 11. 83 – xii.5
 - a. Sotheby, Wilkinson, & Hodge, May 1, 1908, #258 (rev. ill.)
 - b. BMC 378 (obv. ill.)
 - c. Numismatica (Vienna), November 20–21, 1975, #374
- 12. 84 – xii.6
 - a. Santamaria, January 24, 1938, #444 (obv. ill.) (rev. ill.)
 - b. Ciani, FPL without date, #220
- 13. 85 – xii.7
 - a. MMAG 38, December 6–7, 1968 (Voirol Coll.), #410
 - b. M. Ratto, December 1, 1932, #520 (rev. ill.)
 - c. Sakha Hoard, 23 (photo of W. E. Metcalf)
 - d. ANS 1958.214.13 (obv. ill.)

14. 86 – xii.8

a. *BMC* 379 (obv. ill.) (rev. ill.)

XIII. Roma kneeling r. and children standing r., facing Trajan. In exergue:

REST ITAL

1. 78* – xiii.1

a. *MMAg* 15, July 1–2, 1955, #762

2. 79* – xiii.1

a. Vienna, 8027 (rev. ill.)

b. Hess, May 9, 1951, #98

3. 79* – xiii.2

a. Glasgow 136 (rev. ill.)

b. *BMC* 404

4. 87 – xiii.2

a. *MMAg* 10, June 22–23, 1951, #41 (obv. ill.)

ABBREVIATIONS

The following abbreviations represent the major published collections and hoard finds. Other entries include auction catalogs as they are recorded on the cards of the American Numismatic Society photo file.

BMC = Mattingly (1936)

Corbridge Hoard = Craster (1912)

Diyarbakır Hoard = Regling (1931)

Didcot Hoard = Bland and Orna-Ornstein (1997)

Erla Hoard = Jungwirth (1967)

Glasgow = Robertson (1971)

Liberchies Hoard = Thirion (1972)

Mazzini = Mazzini (1957–1958)

Szőny Hoard = Barkóczi and Sey (1963–1964)

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Trajan's Gold Coinage, AD 112–117

PLATES 23–39

MARTIN BECKMANN*

This article uses a die study to establish a firm chronology for the *aurei* of the last six years of Trajan's reign. In addition to clarifying the dates of the various coin types, the die analysis makes specific contributions to our understanding of the poorly documented history of the period and to our comprehension of the internal workings of the Roman mint. The study builds on and extends an earlier investigation of the chronology of the later gold coinage of Trajan, which covered the period AD 112–114, to the death of the emperor in AD 117, while also adding new material from AD 112–114 and making important changes to the chronology of types from that period.

INTRODUCTION: CHRONOLOGICAL OVERVIEW

On January 1, AD 112, Trajan assumed his sixth and final consulship; on the same date he dedicated his new Forum and Basilica complex. In AD 113, increasing troubles with Parthia over the kingship of Armenia led to open preparation for war by the Romans. Trajan left the capital to take personal command of the armies on the eastern front. In the summer of AD 114, Trajan advanced into Armenia and received the (unwitting) submission of Parthamasiris, a ruler appointed by the Parthians after they expelled the previous king, a Roman client. As a result of this bloodless victory, Trajan was saluted as Imperator for the seventh time by his soldiers and was named "Optimus" (The Best) by the Senate.¹ Trajan wintered in

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1. For details of the evidence for the chronology of these events, especially the dating of OPTIMUS to the fall of AD 114, see Beckmann (2000, 119–120).

the east (the exact location is unknown; Antioch, Edesa, or Nisibis are possibilities), then embarked in AD 115 on a campaign against Parthia, which occupied him until just before his death in August of AD 117.

The sequence of events in this war is obscure, especially since our fullest source, Cassius Dio, exists only in fragments preserved in the work of the Byzantine epitomator Xiphilinus. At best a broad outline can be sketched.² Trajan advanced in the summer of AD 115 into northern Mesopotamia, which he subdued before returning to Antioch for the winter. There he survived a destructive earthquake.³ On February 20, AD 116, *laureatae missae* (laurelled dispatches) were received from Trajan by the Senate in Rome, bearing news of his Mesopotamian victories.⁴ As a direct result of these letters being received in Rome, Trajan was given the new title "Parthicus."⁵ Sacrifices were made throughout Rome and circus games were held for three days. Trajan appears to have renewed his attack in AD 116, but revolts in the conquered territories forced him to turn back. By AD 117, Trajan was apparently so ill that he abandoned plans for a further campaign and set out on a return trip to Rome. He died along the way, in Cilicia on the southern coast of modern Turkey, in August. According to the *Historia Augusta*, Trajan adopted Hadrian on his deathbed and sent a letter to that effect to his new son in Syria, where he was acting as governor (SHA Hadrian 4.6). Two days later, Hadrian received a letter informing him that Trajan had died, officially making him emperor (SHA Hadrian 4.7).

METHOD

The numismatic chronology presented below is founded on a die study of *aurei* from public collections, hoards, and auction catalogues. It was possible to gather a total of 581 coins covering the period AD 114–117; in addition, by increasing the number of public collections in the sample and by incorporating material from the large Arquennes and Trier hoards, it was possible to add 110 coins to the corpus of 256 coins used for the earlier study of the period AD 112–114. This brought the total number of coins in the die study to 947, yielding a ratio of 4.6 coins for

2. Longden (1931) presents the most thorough discussion of the evidence and the problems involved; see also Lightfoot (1990), Bennett (2001, 192–196), and Griffin (2000).

3. The date appears to be established by Dio's mention (68.25.1) of the death of Pedo, *consul ordinarius* for AD 115, in the earthquake.

4. *Fasti Ostienses* K.14–17: [I?] X k. Mart. Laureatae missae ad sen[atum ab imp] / Traiano Aug(usto) ob q[u]am causam Par[thicus appell(atus)] / [e]t pro salute eius s(enatus) c(onsultum) f(actus) et supp(licationes) [per omnia delu-] / [b]ra et ludi facti V, IIII, pr. k. M[art. – circ(enses)]).

5. Thus "Parthicus" cannot have been awarded for Trajan's capture of Ctesiphon, as thought for example by Lightfoot (1990, 120, 123).

each obverse die identified (the ratio for reverse dies, which, strangely, are less numerous, is 3.7 coins per die). The die link sequence from January AD 112 to early AD 113 is continuous, with very few outlying coins that cannot be linked in; the sequence from AD 113 to 117 is more fragmentary. Nevertheless, continuing types and die sharing between distinct chronological groups makes it possible to reconstruct a firm linear chronology of types.

The study is presented in three parts. The first part explains revisions to the chronology of the coinage of the years AD 112–114. The second section lays out in detail the chronology of the types of the gold coinage between AD 114–117. The third and final part focuses on what the die study can reveal about the organization and operation of the Roman mint in the early second century AD.

PART 1: REVISIONS TO THE CHRONOLOGY OF THE TYPES OF AD 112–114

Most of the 110 new coins added to the database of 256 *aurei* already collected for the years AD 112–114 represent known dies and known links. New dies (shown in bold italic on the die-link charts following) were relatively few: eight new obverse and eight new reverse dies were added to the eighty-two obverse and seventy-seven reverse dies already identified. New links (shown as dotted lines on the charts) almost always reinforced the sequence already established, either by duplicating known links or by creating new links between coins that already stood close together in the sequence. In three cases, however, new and important evidence was added. This evidence suggests, among other things, that Trajan Senior was deified in January AD 112; that the troubles with the Parthians began not in late AD 113, as generally thought, but rather much earlier in the year (in or before May); and that the *Profectio Augusti* type of AD 114 is connected with Trajan's activities in Armenia rather than his departure from Rome.

The first conclusion stems from a new link between reverse P1 (*Pater Traianus*) and obverse c4. Previously, all but one of the many reverse dies commemorating *Pater Traianus* and Nerva appeared to link in near the middle or later part of the AD 112 sequence. The one exception, N6, linked in (alone) near the very beginning. I suggested that N6's link to this part of the sequence may have been fortuitous, the result of the reuse of an older obverse die to strike the new type. The newly found P1 link, also at the start of the AD 112 sequence, shows that this was not the case. So does newly found evidence of die wear on N6. This die is linked to obverse die a20, which it shares with a number of other reverses. In the N6/a20 combination, obverse die a20 is very fresh; in the V2/a20 combination (e.g., Brussels, du Chastel 499), a20 is markedly worn (especially at the end of the lower wreath tie). This means that a20 was not "lying about," as suggested earlier, but rather that reverse die N6 must be contemporary to reverse die V2 and its associates, struck therefore at the beginning of AD 112.

There is also a marked similarity in style between reverse dies N6 and P1. Uniquely among N reverse dies, N6 has Nerva on the right and Traianus Pater on the left. The busts are also larger and more detailed than on any other N die. Similarly, reverse die P1 is unique in comparison to the other dies of the Pater Traianus series: it has the largest bust of Trajan Senior and the smallest and most carefully executed lettering of the series. The die links clearly demonstrate that N6 and P1 were the first of their types and were both struck at the very beginning of AD 112, together with types showing the Forum, Basilica Ulpia, and the Equus Traianus. Therefore, it seems that the deification of Trajan's blood father coincided with the dedication of his monumental Forum complex. On the silver coinage of this period (*BMC Trajan*, 500), there appears a depiction of a togate figure seated facing left, on a curule chair, leaning on a staff and extending a *patera* in his right hand. The type, as our P series, bears the legend DIVVS PATER TRAIANUS, and may very well represent a cult statue dedicated to Trajan senior on the occasion of his deification, perhaps in the temple of Divine Nerva.

Incidentally, this new link also poses significant questions about our understanding of the mint between AD 112 and 113. As the die-link charts show, the very first issues of AD 112 consisted of reverse types of the Forum, Basilica, Equus, and Via Traiana, along with Divus Pater Traianus and Nerva, all struck using obverse dies carrying dative-case legends (marked by underlining in the charts). This use of the dative case was carried over from the COS V DES VI coinage that immediately preceded it. But very soon a separate series of nominative-case obverses was produced and used exclusively with Pater Traianus and Nerva reverses (the reason was apparently to be sure that the cases on both sides of the coins matched). About halfway through the sequence, the dative-case obverses were abandoned altogether and nominative-case obverses were used for all reverse types. Perhaps the mint was divided for a period of months into two sections, one striking Trajan Senior and Nerva types and the other striking all the rest, or perhaps obverse dies were simply kept carefully separate until at some point it was decided that this was not necessary.

The second important contribution of new links and types involves the Column of Trajan reverse. Previously, only one single Column die (C1) linked into the Group 2 sequence. Since then, not only has one new Column die been found (C5), but also an important new link, between reverse J4 (Jupiter Conservator) and obverse c2, which serves to tie three Column dies (C1, C2, and C5) together into one tight group. These dies are not scattered along the sequence, but rather, as with the Via Traiana (V1 and V2) reverses at the beginning of Group 1, cluster together, suggesting that they were struck at much the same time. The occasion for this striking was almost certainly the dedication of the Column. This occurred later than that of the Forum complex of which it was a part, most likely in May AD

113, following the fragmentary evidence of the *Fasti Ostienses*. These three linked dies give clear evidence of a special issue directly connected to the dedication of the Column, exactly as the Forum, Basilica, and Equus types were issued immediately in January AD 112.

This has important implications for the dating of the beginning of Group 2 issues (it is now clear that Group 3, sharing many types of Group 2 but not that of the Column, is later; see below). Group 2 is composed almost exclusively of military types (Standards) and types appealing to the gods for protection for the emperor and a successful outcome of his undertakings (Jupiter as Conservator Patris Patriae, Fortuna Redux, and Bonus Eventus). The Column reverses are the only exception to this theme. The break between Groups 1 and 2 is complete, and continuing types show that these groups followed each other in chronological sequence. This evidence raises the question as to when the break between Groups 1 and 2 occurred. The inclusion of the Column as a major type suggests that Group 2 began in or before May AD 113. The types of Group 2 (aside from the Column) were clearly inspired by the outbreak of hostilities with Parthia, caused by a dispute over the kingship of Armenia.

The third new conclusion involves two new die links at the very end of the AD 112–114 sequence, in Group 3. Both involve a single reverse die, RP (Rex Parthus)¹. The first is the link of the single RP1 with the main sequence of Group 3 through the die combination J6/b20. The second is the link of this very same die, RP1, with the later OPTIMUS coinage, where it appears again (Group C, die RP1). The same die was used to strike coins both before and after Trajan received his new title Optimus. This was possible because the reverse die RP1 bears only a descriptive legend, “Rex Parthus,” and no imperial titles. Thus it could be freely used with any obverse without the danger of contradiction. This demonstrates conclusively that Group 3 is later than Group 2.

What is more, Group 3 also contains the only PROPECTIO AUGUSTI die (PR1), the first such depiction in fact ever to appear on the Roman coinage. This type also continues, in greater number, in the late OPTIMVS coinage (Groups C and D). Both these types are linked in Group C (the earliest OPTIMVS group) with coins celebrating Trajan as IMPERATOR VII, thus tying all four events (Imperial salutation, Rex Parthus, Profectio, and award of OPTIMVS) to the surrender of the Parthian king Parthamasiris to Trajan in Armenia in AD 114 (see below, in discussion of Group C). Thus the Profectio die PR1 in Group 3 cannot represent Trajan's departure from Rome for the east. Instead, it may represent his departure from the borders of the empire and the start of his campaign against Parthia by his invasion of Armenia. This impression is increased by the fact that die PR1 is very different from all later Profectio dies, being executed with much more care in a finer style, marking it out as the first of its kind to have been cut.

This new chronology for Groups 2 and 3 is reinforced by patterns in obverse die types. The major die link sequence of Group 2, which includes the Column dies, uses almost without exception “a”-type obverse dies (with smooth line of drapery over Trajan’s shoulder). Group 3, on the other hand, uses only “b”-type obverse dies (with cloak clasped at shoulder); this is also the very same type of obverse die that dominates in Group C, which immediately follows Group 3 in chronological order.

PART 2: THE COIN TYPES OF AD 114–117 AND THEIR CHRONOLOGY

The coinage of AD 114–117 falls into two broad groups, defined by the employment of the titles OPTIMUS (awarded in the summer or fall of AD 114) and PARTHICVS (awarded in Rome on February 19 or 20 AD 116). Each of these broad groups can be further divided into two smaller groups, based on their obverse and reverse legends. They are listed below using Mattingly’s group labels (*BMC* Trajan, lxi). Mattingly’s Groups A and B, which he based on the case (nominative or dative) of the obverse legend, have proved to be invalid (Beckmann 2000); Groups C through F, however, are clear and unproblematic. I have added dates for each group as suggested by the die study; the specific grounds for these conclusions are discussed below. The obverse type is always bust of Trajan facing right, mostly cuirassed and draped, sometimes bare with aegis and very rarely only draped (the variations in bust type, even the remarkable aegis variety, seem to have no special significance; see part 3 below).

Group C. Dating: late AD 114.

Obv. IMP TRAIANO OPTIMO AVG GER DAC P M TR P.

Rev. COS VI P P S P Q R or descriptive reverse.

RP = Rex Parthus (1 die, which links to pre-OPTIMUS coinage Group 3)

FR = Fortuna Redux (2 dies)

J = Jupiter Conservator (4 dies)

BE = Bonus Eventus (3 dies)

I = Imperator VII (1 die)

PR = Augusti Profectio (2 dies, one of which die links to Group D)

Group D. Dating: early AD 115 to late February AD 116. The Profectio type dates to the very beginning of the period; Providentia, Regna Adsignata, and Sol types date to the very end of this range.

Obv. IMP CAES NER TRAIANO OPTIMO AVG GER DAC.

Rev. P M TR P COS VI P P S P Q R or descriptive reverse.

PR = Augusti Profectio (1 die, which links to Group C)

FR = Fortuna Redux (23 dies)

J = Jupiter Conservator (10 dies)
 BE = Bonus Eventus (14 dies)
 SA = Salus Augusti (5 dies, a new type)
 V = Vota Suscepta (2 dies, a new type that carries on to Group E)
 P = Providentia (1 die, a new type that also carries on to Group E)
 RA = Regna Adsignata (3 dies, one of which die links to Group E)
 S = Sol (1 die, which links to Group F)

Group E. Dating: March AD 116 to August(?) AD 117 (end date not certain; Regna Adsignata type certainly, Providentia and Vota Suscepta likely date to the very beginning of this period).

Obv. IMP CAES NER TRAIAN OPTIM AVG GER DAC PARTHICO.

Rev. P M TR P COS VI P P S P Q R or descriptive reverse.

RA = Regna Adsignata (4 dies, one of which links to Group D)

S = Sol (2 dies)

P = Providentia (1 die)

V = Vota Suscepta (1 die)

PC = Parthia Capta (12 dies)

Group F. Dating: March AD 116 to August AD 117.

Obv. IMP CAES NER TRAIAN OPTIM AVG GERM DAC.

Rev. PARTHICO P M TR P COS VI P P S P Q R (in one case, HADRIANO TRAIANO CAESARI).

S = Sol (23 dies)

H = Hadrian Caesar (1 die)

Group C is the smallest, with only thirteen reverse and fifteen obverse dies. It is clearly the earliest chronologically, since die RP1 links to the pre-OPTIMVS coinage of Group 2. All types are carried over from Groups 2 and 3, with the exception of the type celebrating Trajan's seventh imperial acclamation. Dio (68.19) informs us that this acclamation took place while Trajan was in Armenia, the occasion being the submission of the Parthian king Parthamasiris of Armenia at Elegeia. The submission of Parthamasiris is surely what is meant by the Rex Parthus type; the Latin label points out the king, shown in a submissive pose before Trajan, who is seated upon a platform and accompanied by his army.

We can now step back and consider the sequence of Group 3 and Group C types. Since Rex Parthus die RP1 in pre-OPTIMVS Group 3 links to (many) dies in Group C, it can be assumed that it was the last die of Group 3 cut. Therefore, presumably the Profectio die in Group 3 refers to Trajan's setting out from the border of the Roman Empire to invade Armenia, which he soon subdued without fighting

and where at Elegeia he received the submission of Parthamasiris. The news of this submission presumably reached Rome shortly after that of Trajan's *Profectio* into Armenia and was immediately commemorated on the coinage. Almost immediately, the Senate granted Trajan the title *OPTIMVS*, which then required new coin dies—with the exception of the die *RP1*, which did not bear any imperial titles and thus still could be used with the new *OPTIMVS* obverses without causing any contradictions.

Group D is much larger, with sixty reverse and seventy-four obverse dies. Its chronological place after Group C is clear, since it has one die (*PR1*) that links to the earlier group. What occasioned the change (involving the addition of *CAES NER* to the obverse legend and the shifting of *P M TR P* to the reverse) is not clear. It may have been simply a decision of aesthetics: the short reverse legend of Group C (resulting from the need to move *OPTIMVS* to the obverse when it became part of Trajan's name) required larger letters and greater spacing between them, leading to a less unified design. The longer reverse legend of Group D acted more effectively as an epigraphic frame for the coin types. The short duration of Group C suggests that Group D begins late in AD 114 or very early in 115.

The standard types of *Fortuna Redux*, *Bonus Eventus*, and *Jupiter Conservator* still dominate Group D (making up forty-eight of sixty reverse dies), but five new types also appear. The most striking is that of *Salus Augusti*, showing the goddess (labeled *SALVS AVG*) seated on a throne, holding a patera over an altar around which a snake is coiled. *Salus* was not an uncommon type on the Roman coinage and had already appeared on earlier bronze issues of Trajan between AD 103 and 111. However, this time the goddess is specifically labeled as *SALVS AVGusti*, a specific invocation of *Salus* to intercede for the emperor's health. What is more, *Salus* is closely linked to the rarer type *Vota Suscepta* (dies *S3* and *V1* share obverse dies with *FR7*). This greatly strengthens Strack's (1931, 227) suggestion that these coins represent vows for his health and safe return made to Jupiter by the Senate and the People after the fashion of those made for Augustus and commemorated on his coinage in 16 BC (showing inscribed in an oak wreath: *Iovi Optimo Maximo senatus populusque Romanus vota suscepta pro salute Imperatoris Caesaris*; *BMC Augustus*, 92; *RIC*², 358). The iconography of Trajan's votive coins reflects exactly such an event: the Senate and the People, shown as personifications standing left and right of a small altar, are in the act of pouring libations. The emperor's health problems were serious enough to make a fairly major appearance on the coinage (*Salus* is represented by five dies, the *Vota* by two).

These coins make it necessary to reassess the timing of the beginning of Trajan's health problems and of the vows commemorated. Dio (68.31–33) puts the first instance of Trajan's illness in the last year of his life, immediately following the siege of Hatra, which he was forced to give up in the fall of AD 116. Group D, how-

ever, ends with the award of the title *PARTHICVS*, which occurred much earlier, in February AD 116. The *Fasti Ostienses* record a *senatus consultum* and “sacrifices made in all temples, and circus games” (*supplicationes per omnia delubra et ludi circenses*) made “for his health” (*pro salute eius*) after Trajan was named Parthicus (*Fasti Ostienses* K.14–17). But the coin evidence makes it clear that vows were made for the emperor’s health well before he was given the title Parthicus. Therefore the emperor must have fallen into ill health already in AD 115, perhaps even during the winter of 114/115. There is unfortunately a break in the *Fasti* between spring AD 113 and the later summer of 115, so that they cannot aid in dating the event. Although the die sequence of Group D is not complete, more than half the known dies do link together in one sequence, and *Salus* dies (and one *Vota Suscepta*, V1) appear throughout it. This suggests that these two types were in use for most of the time that Group D was being struck.

The next new type is *Providentia*. The goddess stands facing left, leaning on a pillar, her left hand holding a staff and her right arm extended over a globe decorated with the band of the zodiac, which lies at her feet. She is labeled *PRO(videntia) AVG(usti)*, or “the Foresight of the Emperor.” Mattingly suggested that this “foresight” marked Trajan’s selection of Hadrian as his heir, but this seems unlikely since Hadrian’s first appearance on the coinage (as Caesar in Group F) occurs much later. It is more likely to have been intended to invoke—or honor?—Trajan’s careful planning of his campaigns and the expansion of the empire (Armenia was already a new province, and more were soon to come). It also seems to be closely connected to whatever event led to the coining of the *Regna Adsignata* type: both P1 and RA1 share the same single obverse die.

The historical occasion for the *Regna Adsignata* type has never been clear. Dio (68.18) records that when Trajan entered Armenia, foreign kings began to approach him with gifts. The dating (AD 114), however, does not correspond with our coins. Eutropius (*Breviarum* 8.3) mentions Trajan giving a king to the Albanians after securing Armenia, and receiving the kings of many other lands, but there is no clear indication of date. The close connection of the *Regna Adsignata* type with the award of the title Parthicus (the type continues in Group E) suggests that the *regna* were assigned at about the time when Trajan completed his conquests of AD 115. It is possible that news of these victories were included the content of the *laureatae missae*, the “laurelled letters” mentioned by the *Fasti* as sent to Rome by Trajan on February 20, AD 116 (*Fasti Ostienses* K.14). Trajan’s victories in the east were also most likely the occasion for the new type showing the radiate bust of Sol, the sun god, which forms almost the entire bulk of Group F.

At the end of Group D, along with *Regna Adsignata* (RA, three dies), is Sol (S, one die). These types certainly come at the end of the Group D sequence, since dies of each type (two of the former and one of the latter) link to obverses of Groups

E and F, which bear Trajan's new title Parthicus (RA2 and RA3 links to Group E, where they are catalogued below as dies RA3 and RA1, and S1 links to Group F, where it is die S5). The pattern of introduction of new coin types at this point, i.e., the division between Group D and Groups E and F, appears very similar to that which occurred at the point of division between Group 3 and Group C, when Trajan was awarded the title Optimus. There, the event for which Trajan received his new title (the submission of the Parthamasiris) appeared in the coinage just before the new title did. Here, two types connected to Trajan's successes in Mesopotamia appear on the coinage just before he is awarded the title Parthicus. One of these types, Oriens, then goes on to constitute the single most common type of Trajan's coinage between February AD 116 and his death in 117.

Groups E and F follow immediately on Group D, as is shown by the shared die links discussed above. Their place at the end of the chronological sequence of Trajan's coinage is assured by the appearance on them of the title Parthicus, awarded in February AD 116. Group E, the smaller of the two with thirty obverse and twenty reverse dies, is marked by the PARTHICO on the obverse, which is used with a moderately broad range of reverse types. Regna Adsignata, Sol, Providentia, and Vota Suscepta all continue from the coinage of Group D, although only Regna Adsignata appears to have been given a place of some importance, with four dies. The main reverse type of Group E is a new one: Parthia Capta. This type shows two captives in mourning poses seated at the base of a trophy. The bows and quivers at their feet mark them as Parthians, as does the legend PARTHIA CAPTA below. Very popular, this type is represented by twelve dies.

Group F, on the other hand, is markedly different in its composition, in addition to being notably larger (forty-five obverse and twenty-four reverse dies). In contrast to Group E, the title Parthicus appears on the reverse rather than the obverse, and the entire group is dominated by one single type: Sol, shown as a draped bust of a young man wearing a radiate crown. The type is represented by twenty-three reverse dies, the most of any type within a single group in this study. Although Strack (1931, 229) argues that the type cannot have connoted victory, given Hadrian's willingness to repeat the type though he had given up Trajan's conquests in the east, this conclusion is nonetheless difficult to avoid. Its intimate connection to the award of the Trajan's new title Parthicus and its extensive use on the coinage makes a victorious meaning the most likely. Hadrian's use of the type may be explained as an attempt to spread a message of continuity and of security in the eastern provinces—a much-needed signal, given the multiple military crises he faced at the start of his reign.⁶

6. See Birley (1997, 77–81) on the challenges facing Hadrian at the beginning of his reign. My thanks to a reviewer of the *AJN* for pointing out this reference.

There is only one other reverse type in Group F, and it is represented by a single die: Hadrian as Caesar (H1). This shows a partly draped bust of the new Caesar wearing a laurel wreath with the legend HADRIANO TRAIANO CAESARI. Until very recently, this type was only known from a single example, which was lost in the robbery of the Paris cabinet in 1831; only a cast was preserved. A second specimen has since appeared on the market (see catalogue), struck from the same dies and allowing a better impression to be had of style and fabric. Both seem to be very good, corresponding closely with that known for the late portraits of Trajan and the early issues of Hadrian. There is no reason to doubt the authenticity of the piece. Its chronology is a different matter. Unfortunately, the single obverse die known for this type (f18) does not link into the main sequence of Group F dies, so it is still not possible to definitively dispel the suspicion that this type may have actually been struck after Trajan's death.

The most important question is whether there is any chronological difference between Groups E and F. From the die study, it appears not. Mattingly argued that F is "no doubt" later than E, based on reverse types. In his opinion, E ran from early 116 to the end of that year and F from late 116 to August 117 "and refers to some of Trajan's last schemes, when his eyes were turned to the farthest East" (*BMC*, lxii). Strack (1931, 38–39) favored this order too, with the change occurring in the winter of AD 116/7. From the perspective of the gold coins in this study, it appears that Groups E and F were essentially contemporary issues. From D to E there are direct die links via the Regna Adsignata type (both RA2 and RA3 of Group D are also used to strike coins with Parthicus obverses in Group E), plus two shared types, Vota Suscepta and Providentia. From D to F there is a direct die link via S1 (Group D) / S5 (Group F). Group F is almost entirely made up of the type showing the bust of Sol; E is a mix but does have two Sol dies. It would seem that at the end of Group D, Oriens and Regna Adsignata were created as new types. The coinage then split into two series, one focused on Sol and the other on Parthia Capta.

Epigraphic considerations may lie behind this split. It would have been redundant to use the Parthico reverse legend with a reverse type labeled Parthia Capta; therefore Parthicus was shifted to the obverse on these issues. The Group E Parthicus obverses were the only choice possible to pair with the Regna Adsignata type, which had only a descriptive legend on the reverse. Chronologically, there is no difference whatsoever in the legends between Groups E and F: in each case Trajan's name is spelled out IMP CAES NER TRAIAN OPTIM AVG GER(M) DAC PARTHICO P M TR P COS VI P P. The only differences are cosmetic: Group F adds an M to GER on the obverse and splits Trajan's name after DAC instead of after PARTHICO on Group E. The situation may have been similar to that which occurred for the first half of the Group 1 sequence in AD 112. There, after a brief period of all types being struck together, the mint established two concurrent series of production:

one using a nominative-case obverse to strike reverse types of the Deified Nerva and Trajan Senior, the other using dative-case obverse dies to strike all other types (Forum, Basilica, etc.). At the beginning of AD 112, the dative case was standard for obverse legends, being carried over from the coinage of AD 111. New nominative-case obverse legends seem to have been introduced only so that they would correspond to the nominative-case legends on the Nerva and Trajan Senior dies.

PART 3: MINTING PRACTICE

The die study sheds light on some of the working methods of the Roman mint in the early second century AD. One is evidence for a previously unnoticed practice, in some cases at least, in the creation of dies: that of cutting “archetypal dies” when a new reverse type was introduced. These dies are characterized by being much more carefully executed in a much finer artistic style than all other dies of their type. The inscription is also usually much clearer, appearing in smaller and more regularly cut letters. In Group 1, dies P1 and N5 clearly fit these qualifications; what is more, they are shown by die links to be the first of their types to have been employed, likely in January of AD 112. Forum die F7 is most likely another example. Its overall quality is not so clearly superior to its fellows, but it does show details of the sculpture atop the façade that do not appear on any other Forum dies (Beckmann 2005). In Group 2, die C5 is by far the most true to the original detail of the Column of Trajan, and J3 from the same group is much more finely executed than others of its type (note especially the relatively larger proportions of the emperor and his carefully rendered toga). Profectio die PR1 in Group 3, the first appearance of this type in the Roman coinage ever, is also of markedly higher quality than other examples seen later, as is Salus die SA5 in Group D.

It seems likely that a master engraver was engaged for the task of cutting these archetypal reverse dies. He may have come from within the mint (perhaps normally engaged on the more demanding task of cutting obverse dies), or he may have been a specialist engraver or gem cutter brought in from outside. But this model does not apply for every new type. Of the many dies showing Sol, for instance, none is so strikingly superior as to make one think of the work of a master engraver. In particular, we would expect to see his hand on die S1 in Group D (= S5 in Group F), presumably the first appearance of the type in our sequence. The explanation may be that there already existed a number of models for the bust of Sol on earlier coins, particularly of Augustus. The case of die BEA1 in Group 3 is harder to understand. It is perhaps the most artistic of all dies in this study, a brilliantly near-three-dimensional rendering of Bonus Eventus in three-quarters view. At the same time, it is clearly not the first Bonus Eventus die to have been used: it is only two links removed from RP1, a die used in Trajan’s Optimus coinage, and therefore could not have stood as a model for the Bonus Eventus dies of Group 2.

For this, as in the case of Sol, there were other models available from the coinage of earlier emperors. The inclusion of the altar on the BEA dies may have been significant: this was not a standard feature of earlier depictions of Bonus Eventus.

The die study helps shed some light on the significance of different obverse bust types. The most common bust type of the period is cuirassed and draped. The draped bust is uncommon in Groups 1 and 2 and very rare in Groups C through F. The bust with aegis is uncommon or rare everywhere but in Group D, where there are ten examples (of a total of seventy-three obverse dies, one is draped and the others are all cuirassed and draped). The die sequence of Group D makes it clear that the aegis busts cluster together chronologically (they are underlined on the die link charts for Group D): dies d6, 31, 29, and 39 all link together with reverses FR10 and FR9; obverses d19 and 30 with SA3; and obverses d4 and 64 with FR1. Do these represent special issues of some sort? The sheer quantity of dies suggests not, as does the fact that these aegis-bust clusters all link into the normal sequence of dies rather than standing alone. It seems more likely that the suggestion of Bernhard Woytek is correct: the differences in bust type represent the exercise of limited artistic freedom by the die engravers (B. Woytek, personal communication).

Some remarks on the quantity of coin production can be made. Based on the dates for the various groups suggested above, a calculation using the total number of obverse and reverse dies yields the following ratios of dies per month:

Groups 1–3: 8.7 dies/month

Group C: 9.3 dies/month

Group D: 10.1 dies/month

Groups E and F: 6.8 dies/month

These figures speak for a steady increase in production of *aurei* from Group 1 through to Group D. In fact, there was most likely a greater increase than these figures indicate, since the die-link charts suggest that while most dies of Group 1 have likely been identified (the die-link sequence is complete and there are very few coins that do not link into it), for later groups there are a larger number of dies that are not represented in the sample. In particular, Groups D, E, and F exhibit broken sequences and numerous unlinked coins and small groups of coins. Another factor also speaks for increased coin production in Groups C through F: die wear. In the period AD 112–114, die wear is almost unknown on the gold coinage. From the period AD 114–117 on the other hand, die wear is almost common (instances are noted in the catalogue). In some cases it is even possible to trace the progress of die damage through a series of links.

These factors point to a substantial increase in the volume of the coining of gold that occurred in or after the year AD 114. This increase was so great that it apparently strained the capabilities of the mint staff to maintain their accustomed

level of quality control, as dies were used well beyond the point where they would have been discarded during the earlier period AD 112–114. It would make sense to associate this increase with Trajan's war with Parthia and the increased expenses connected with the massive troop buildup and military supply and administration necessary for the invasion.

In this context, the sharp drop in the ratio of dies per month in the contemporary Groups E and F is striking. Also odd is the ratio of obverse dies to reverse dies in these two groups. In Groups 1–3 it is 1.1 to 1; in Group C, 1.2 to 1; in Group D, 1.3 to 1; in Group E, 1.5 to 1; in Group F, 1.9 to 1. It is normal to have more reverse than obverse dies, since the latter are usually set firmly in an anvil and less susceptible to damage, thus needing replacement less often. The slightly higher obverse to reverse ratio in Groups 1–3 may perhaps be explained by more care being taken to scrutinize the obverse dies for signs of damage, since they bore the portrait of the emperor. In these groups, there is very little evidence of wear or damage to obverse dies. The ratio in Group F, with nearly twice as many obverse dies attested as reverse, is very difficult to explain. One possibility that would potentially make sense is that some obverse dies were used for both gold and silver, but this is exceedingly rare in this period, and I have found only one example, from Group E, of an aureus die being used to strike a denarius.⁷ In fact, most denarius obverse dies bear an entirely different portrait type from that common on the *aurei* (bare or draped versus cuirassed and draped), ruling out most possibilities of die sharing. It is possible that some chance of preservation has skewed the sample and that there are in fact many more reverse dies awaiting discovery.

Finally, the die study also sheds light on what happened to the coins after they left the mint. The method of coin distribution from Rome to the provinces is largely unknown, but it is already well known that the coin population over the entire empire was not homogenous, particularly when the relative rarity of individual coin types is considered.⁸ For example, one coin type may be common in Gaul but rare in Dacia. This suggests not only that coins did not circulate between regions with complete fluidity but also that different regions received shipments of coins of different natures. The die study furnishes some important evidence to support and clarify this concept, in the form of die links within three major hoards: Liberchies, Arquennes, and Trier. The Liberchies Hoard has three instances of two coins being struck from the same pair of obverse and reverse dies (BE1/d2, FR17/d51, V1/e9). The Arquennes Hoard also has three instances of two coins struck from same pair of dies: S4/d33, S8/f25, J7/d58 (there are also some linked groups: see BE11 and

7. The shared die is e23, bust with aegis, reverse Sol. Frank Sternberg Auction Oct. 23, 29, 2000, lot 502.

8. See Duncan-Jones (2005, 471–476) and references cited there.

BE12 in Group D). In the great Trier Hoard, there are two cases of two coins sharing the same obverse and reverse dies (BE2/d11 and VI/d45) and a number of coin pairs that share the same reverse (FR2 in Group C; FR7, FR9, and V1 in Group D). This situation, especially the appearance of pairs of coins struck from the very same dies, is remarkable—unknown, in fact, in any other large collection of *aurei* of the period except for that of the British Museum.⁹ For this to happen, the original coin population from which the hoard was drawn would have had to contain unusually large numbers of certain issues struck from the same dies. This suggests that coins were shipped from Rome to their intended destination in the provinces in batches made up of issues struck over a short period. Consider the pairs S4/d33 and J7/d58 from the Arquennes Hoard: not only are there two coins from each die pair in the hoard, but these four dies were also clearly in use in the mint more or less at the same time (see the die-link charts for Group D). Quite possibly, all four coins were struck at Rome, parceled together with many others and sent, perhaps as a military payment, to Gallia Belgica. All the coins are fairly worn, indicating that they circulated but did not leave the province. Instead they remained in use in roughly the area where they were sent, until they found their way into the hoard.

CONCLUSIONS

Trajan's gold coinage of AD 114–117 continued the tradition, already clearly in place in the earlier period AD 112–114, of responding to major historical and political events with timely changes in numismatic iconography. The immediacy and specificity of this iconography speaks for the importance of coinage as a bearer of official messages. At the same time, the die study also reveals the effects of the stress of war on the Roman mint. Common types are cut in remarkably large numbers, and variations in the quality of die execution are often striking. The demands of war can also be seen in the increasing frequency of die wear and damage, indicating that mint production increased dramatically. The resulting picture of the workings of the Roman mint in the last years of Trajan's reign is complex, but this is exactly what should be expected in an institution that had both economic and political functions of the highest importance.

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9. Die pairs PV1/d41 (*BMC* 582 and 587) and S15/f4 (*BMC* 622 and 623).

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CATALOGUE

Bibliographic Abbreviations

BullCom	<i>Buletino della Commissione archeologica comunale di Roma</i>
FRMÖ	<i>Die Fundmünzen der Römischen Zeit in Österreich</i>
NC	<i>Numismatic Chronicle</i>
NK	<i>Numizmatikai Kozlöny</i>
RIN	<i>Rivista Italiana di Numismatica e Scienze Affini</i>

Abbreviations of Hoards and Collections

Arquennes Hoard Arquennes, Belgium. All recorded in archive in Brussels, most sold at Spink, many but not all in catalogues 60 (7 October, 1987), 65 (5 October 1988), and later auctions.

Augsburg Hoard L. Weber, Ein Schatzfund römischer Aurei in Augsburg, *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 28 (1981): 133–170.

Belloni Belloni, G. G. 1973. *Le monete di Traiano*. Milan.

Berlin Münzkabinett, Berlin. There is no unified numbering system; instead, coins are identified by accession year and source. Because this means that some coins share the same ID, weights are added as specific identifiers.

BMC *British Museum Catalogue*.

Brenot and Metzger Brenot, C., and C. Metzger, C. 1992. Trouvailles de bijoux monétaires dans l'Occident romain. In *L'or monnayé III. Trouvailles de Monnaies d'or dans l'Occident romain*, edited by C. Renot and X. Loriot, 313–371. Paris.

Brigetio Hoard Barkóczi, L., and K. Biro-Sey. 1963–1964. Brigetioi aranyelet. *Numizmatikai Közlöny* 62–63: 3–8.

Diyarbakır Hoard Regling, K. 1931. Der Schatz römischer Goldmünzen von Diarbekir (Madrin). *Blätter für Münzfreunde* 11: 353–365. (A hoard of probably thousands, 302 preserved in in the Arkeoloji Müzeleri at Istanbul, only selected pieces illustrated, two of the period covered here.)

Erla Hoard Jungwirth, H. 1967. Der Münzschatzfund von Erla. *Numismatische Zeitschrift* 82: 26–48, plates 1–5.

Florence Museo Archeologico Nazionale, Firenze.

Halle Landesmuseum, Halle.

Hermitage State Hermitage Museum, St. Petersburg.

Hunter Robertson, A. S. 1971. *Roman imperial coins in the Hunter Coin Cabinet, II: Trajan to Commodus.* Glasgow.

Jameson Collection R. Jameson, 1913. Tome 2: *Monnaies Impériales Romaines.* Paris.

Kestner Berger, F. 1991. *Die antiken Goldmünzen im Kestner-Museum Hannover.* Hannover.

Liberchies Hoard Thirion, M. 1972. *Le Trésor de Liberchies.* Brussels.

London Plantation Place, London. 2001. Images from Museum of London Web site.

Madrid Asins, C. A. 1993. *Catalogo de las monedas antiguas de oro del Museo Arqueológico Nacional.* Madrid.

Milan Belloni, G. G. 1973. *Le monete di Traiano.* Milan.

Rome, MC Meagliere nel Museo Capitolino, Rome.

Trier Hoard I Trier Leostrasse. Elmer, G., and P. Steiner. 1936. Ein Schatz flavischer und antoninischer Goldmünzen aus Trier. *Trierer Zeitschrift für Geschichte und Kunst* 11: 170–175, plate 9.

Trier Hoard II Trier Feldstrasse 1993. Preliminary report: Gilles, K.-J. 1993. Der große römische Goldmünzfund aus Trier. *Funde und Ausgrabungen im Bezirk Trier* 26: 9–24. Most coins are identified here by inventory number, but three of type RIC 347 (Bonus Eventus, Group D) are identified only by weight, since when I was at the Landesmuseum to study the hoard the preliminary catalogue was not complete for this type.

Vatican Biblioteca Apostolica Vaticana, Medagliere.

Via Po Hoard Cesano, S. L. 1929. Ripostiglio di *aurei* imperiali rinvenuto a Roma. *BullCom* 57: 1–119.

Vienna Vienna, Kunsthistorisches Museum.

Villach Hoard Dick, F. FRMÖ II/3, Villach Hoard, pp. 35–41.

NEW COINS OF GROUPS 1–3

This update for the period AD 112–114 maintains the formatting used in Beckmann (2000); the catalogue for the period AD 114–117 uses a simplified system. The catalogue for AD 112–114 is arranged by reverse types, identified by an upper-

case Roman numeral (e.g., II); one type, IV, is further subdivided into two groups (IVa and IVb), based on a small difference in the reverse legend. Die combinations are numbered sequentially at the far left. Each die combination entry includes the identification of the obverse die (in italics if it links to reverse dies of another type) followed by individual reverse dies identified by an uppercase letter (e.g., F for dies of the Trajan's forum type) and a sequential number. Individual examples of coins from any one pair of dies are identified by a lowercase letter followed by the specific reference for that coin.

Obverses:

IMP TRAIANVS/O AVG GER DAC P M TR P COS VI P P.

Obverse types

- (a) Bust of Trajan laur., r., dr. and cuir.
- (b) Bust laur., r., dr. with clasp on shoulder and cuir.
- (c) Bust laur., r., dr.
- (d) Bust laur., r., dr. and cuir., with small globe beneath (quite rare).
- (e) Bust laur., r., bare except for aegis at front (only one example).

I. Trajan's Forum (abbreviated F for Forum)

Reverse: FORVM TRAIAN (in ex.). Facade with sculpture.

- | | | | |
|-------|-----|----|------------------------------------|
| 3a. | a15 | F1 | b. Trier Hoard II 1933. |
| 3b. | a22 | F1 | a. Vienna 8095. |
| | | | b. Trier Hoard II 1934. |
| 9. | b6 | F4 | b. Madrid 205. |
| 10. | b8 | F4 | c. Trier Hoard II 1935. |
| 10b. | a59 | F4 | a. Berlin 1869 Peytrignet 7.025 g. |
| 11. | a15 | F5 | c. Berlin Herrmann 7.13 g. |
| | | | d. Trier Hoard II 1932. |
| 16. | b4 | F6 | f. Paris Mionnet 3. |
| | | | g. Vienna 134292. |
| 16a. | b8 | F6 | a. Hermitage OH-A3/65Д 1844. |
| 17. | a17 | F6 | b. Trier Hoard II 1931. |
| 19. | c3 | F7 | c. Vatican. |
| 20. | a18 | F7 | e. Vienna 8096. |
| | | | f. Hermitage OH-A3/65Д 1843. |
| 20aa. | a19 | F7 | a. Madrid 204. |
| 22. | a20 | F8 | b. Florence 276. |
| 22a. | a29 | F8 | a. Hermitage OH-A3/65Д 2890. |
| 23. | a21 | F9 | d. Bern RKo877. |
| 24. | a22 | F9 | c. Trier Hoard II 1936. |

II. Basilica Ulpia (abbreviated **B** for Basilica)*Reverse:* BASILICA VLPPIA (in ex.). Facade with sculpture.

- | | | |
|---------|----|--|
| 1. a14 | B1 | e. Trier Hoard II 1928. |
| 2. b4 | B2 | b. Paris Mionnet 2.
c. Vienna 8097.
d. Hermitage OH-A3/65Д 1833. |
| 3. a16 | B3 | m. Bern RK0836. |
| 4. c2 | B3 | b. Madrid 202. |
| 5. a23 | B3 | b. Berlin Gansauge (1873) 7.21 g. |
| 10. a27 | B5 | c. Berlin 1860/21298. |

III. Via Traiana (abbreviated **V** for Via)*Reverse:* S P Q R OPTIMO PRINCIPI; VIA TRAIANA (in ex.). Woman reclining l., holding wheel.

- | | | |
|--------|----|--------------------------------|
| 1. a18 | V1 | c. Trier Hoard II 1937. |
| 4. a30 | V2 | c. Vienna 8128.
d. Vatican. |

IVa. Trajan Senior (abbreviated **P** for Pater Traianus)*Reverse:* DIVVS PATER TRAIANVS. Bare bust of Trajan senior r., draped.

- | | | |
|--------|----|---|
| 1a. a4 | P1 | a. Florence 273.
b. Trier Hoard II 1980. |
| 1b. c4 | P1 | a. Unattributed cast in the BM. |
| 2. a1 | P2 | b. Rome, MC 3599. |
| 4. a2 | P3 | c. Arquennes Hoard 360. |

IVb. Trajan Senior (abbreviated **P**, continuing from above)*Reverse:* DIVVS PATER TRAIAN. Type as IVa above.

- | | | |
|-------|----|---|
| 7. a1 | P8 | a. MMAG Deutschland 14, 16th April 2004, lot 123. |
|-------|----|---|

V. Deified Nerva and Trajan Senior (abbreviated **N** for Nerva)*Reverse:* DIVI NERVA ET TRAIANVS PAT. Facing busts of Nerva, r., laureate and draped, and Trajan senior l., bare-headed.

- | | | |
|-------|----|-------------------------|
| 5. b3 | N2 | d. Arquennes Hoard 359. |
| 6. b4 | N2 | d. Trier Hoard II 1981. |

- | | | | |
|------|-----|----|--|
| 7a. | a9 | N2 | a. Florence 275. |
| 13. | a9 | N4 | d. Rome, MC 3600. Does not have big reverse die break as on V.13.b.
e. Madrid 216. No die damage. |
| 15. | a10 | N5 | c. Arquennes Hoard 358. |
| 16. | a11 | N5 | b. Bern RKo870.
c. Diyarbakır Hoard 162. |
| 16a. | a9 | N5 | a. Madrid 215. |

VII. Jupiter Conservator (abbreviated J for Jupiter)

Reverse: CONSERVATORI PATRIS PATRIAE. Large male figure standing r., draped, staff in left arm and holding a thunderbolt over the head of a small figure dressed in a toga and holding a branch.

- | | | | |
|------|-----|-----|--|
| 2a. | b19 | J1 | a. Florence 259. |
| 6. | a39 | J4 | b. Arquennes Hoard 347. |
| 7. | a40 | J4 | b. Berlin Alter Besitz (Thesaurus Brandenburgensis II 651) 7.29 g. |
| 8aa. | a46 | J4 | a. Vienna 8100. |
| 8b. | a57 | J4 | a. Arquennes Hoard 349. |
| 8c. | a52 | J4 | a. Florence 256.
b. Boston 1975.785. |
| 9. | b10 | J5 | f. Arquennes Hoard 348. |
| 11. | b11 | J7 | b. LHS 95, 25th Oct. 2005, lot 796. |
| 15. | d1 | J9 | d. Vienna 8101. |
| 16a. | a48 | J9 | a. Vatican. |
| 17. | a43 | J9 | b. Bern RKo837. |
| 20. | b21 | J10 | a. BRB. |
| 21. | b25 | J11 | a. Gorny & Mosch 126, 13th Oct. 2003, lot 2392. |

VIII. Legionary Eagle and Standards (abbreviated S for standards)

Reverse: S P Q R OPTIMO PRINCIPI. Aquila flanked by legionary standards, one topped by a hand and the other by a wreath.

- | | | | |
|------|-----|----|---|
| 7. | b14 | S4 | e. Oxford 7.20 g.
f. Vienna 8124. |
| 9. | b16 | S4 | b. Florence 307. |
| 10. | a45 | S4 | b. Berlin (unnumbered) 6.77 g.
c. Trier Hoard II 1943. |
| 11. | b17 | S5 | b. Florence 308. |
| 13. | a47 | S7 | b. Madrid 206. Reverse does not show die wear. |
| 13a. | b16 | S7 | a. Arquennes Hoard 355. |

- | | | |
|------|---------|---|
| | | b. Vienna 8123. |
| 14. | a48 S8 | d. Vatican. |
| 15. | b18 S8 | f. Trier Hoard II 1942. |
| 16a. | d1 S8 | a. Arquennes Hoard 356. |
| 17. | a50 S9 | c. Halle (Fürstengrab von Gommern) neg. 1762/4 n. 10. |
| 18. | a46 S10 | a. Rome, MC 3528. |

IX. Bonus Eventus standing alone (abbreviated **BE** for Bonus Eventus)

Reverse: S P Q R OPTIMO PRINCIPI. Figure standing l., holding patera and corn ears.

- | | | |
|------|----------|-------------------------|
| 2. | a33 BE1 | b. Vienna 8068. |
| 5. | a37 BE1 | b. Rome, MC 3523. |
| 6a. | a58 BE1 | a. Arquennes Hoard 351. |
| 10. | a44 BE3 | c. Arquennes Hoard 350. |
| 10a. | a60 BE3 | a. Florence 301. |
| 12. | a46 BE5 | b. Arquennes Hoard 352. |
| 13. | a47 BE6 | d. Trier Hoard II 1939. |
| 19. | a57 BE11 | a. Arquennes Hoard 353. |
| 20. | a45 BE12 | a. Vatican. |
| | | b. Trier Hoard II 1938. |

X. Bonus Eventus with altar (abbreviated **BEA** for Bonus Eventus and Altar)

Reverse: S P Q R OPTIMO PRINCIPI. Standing figure holding patera and corn ears, beside square garlanded altar.

- | | | |
|----|----------|------------------------------|
| 1. | b9 BEA1 | b. Florence 303. |
| 3. | b11 BEA1 | b. Arquennes Hoard 354. |
| | | c. Florence 304. |
| | | d. Vienna 8078. |
| | | e. Trier Hoard II 1927. |
| | | f. Hermitage OH-A3/65Д 1859. |
| 4. | b23 BEA2 | a. Vatican. |

XI. Trajan's Column (abbreviated **C** for Column)

I am now inclined to think that Column dies C3 and C4 (illustrated in Beckmann 2000) are not genuine *aureus* dies. They look much more like *denarius* dies, are known only from single coins, and do not link into the main sequence. The coins in question may be cast forgeries.

Reverse: S P Q R OPTIMO PRINCIPI. Trajan's column.

- | | | |
|----|--------|-------------------|
| 2. | a52 C2 | d. Rome, MC 3527. |
|----|--------|-------------------|

3. a53 C2 e. Trier Hoard II 1941.
 c. Florence 305. Shows clear die wear (in field below M, below Column pedestal) not present on XI.2.d.
6. a52 C5 a. NAC 24, 5th Dec 2002, lot 73.

XII. Fortuna Redux (abbreviated FR)

Reverse: S P Q R OPTIMO PRINCIPI, FORT RED in ex. Female seated l., holding cornucopia.

1. b17 FR1 c. Oxford 6.92 g.
 d. Trier Hoard II 1930.
- 1a. b24 FR1 a. Trier Hoard II 1929.
3. b22 FR3 a. Coin Galleries 11th Feb. 1987, lot 27.
4. b23 FR3 a. Maison Palombo 2, 30th April 2005, lot 82.
5. b17 FR4 a. Hermitage OH-A3/65Д 1842.

XIII. Profectio Augusti (abbreviated PR)

Reverse: PROPECTIO AVG in ex. Trajan on horseback, riding r., two soldiers behind and one in front.

1. b13 PR1 b. Paris Mionnet 5.
 c. Hermitage OH-A3/65Д 1854.

XV. Equus Traianus (abbreviated ET)

Reverse: S P Q R OPTIMO PRINCIPI. Trajan seated l. on horseback, right hand raised holding spear, left hand holding statuette of winged Victory.

2. a29 ET1 a. Gorny 84, 13th Oct. 1997, lot 5845.
3. c4 ET1 a. Trier Hoard II 1940.

AD 114–117, GROUPS C, D, E, AND F

The catalogue is arranged first by Group (C–F), then alphabetically by reverse type. Individual coins are identified by lowercase letters subordinated to the various die pairs, e.g., in Group C, coin FR2/c9.b = reverse FR2 paired with obverse c9, the second known example (b) of this die pair. Hoards and collections are generally abbreviated; these are expanded above. Coins from auction catalogues and other sales are given with year and day of sale where possible (coins from the BM cast collection generally have only lot numbers).

Group C

Obverse legend: IMP TRAIANO OPTIMO AVG GER DAC P M TR P.

Reverse legend: COS VI P P S P Q R or descriptive reverse.

- | | | |
|------|-----|---|
| BE1 | c4 | a. Schulman, 16th Feb. 1961, lot 1681.
b. BRB (Liberchies Hoard 212).
c. Salton-Schlessinger FPL 29, Winter 1955, lot 86
(does not show damage on inner right thigh as on
BE1/c4.a).
d. Arquennes Hoard 363. |
| | c5 | a. LHS 95, 25th Oct. 2005, lot 797. |
| | c12 | a. Hirsch, 29th March 1955, lot 559. |
| BE2 | c2 | a. Florence 266. |
| | c3 | a. BMC 518. |
| | c5 | a. Arquennes Hoard 362.
b. Hermitage OH-A3/100Д 467. |
| | c13 | a. Bourgey, 14th December 1934, lot 172.
b. Florence 271.
c. Trier Hoard II 1946. |
| | c15 | a. NAC 4, 27th Feb. 1991, lot 356. |
| BE3 | c11 | a. Via Po Hoard 243. |
| FR1 | c7 | a. Vienna 8088.
b. Arquennes Hoard 364. |
| | c13 | a. Hirsch 18, 27th May 1907, lot 764 = Hirsch 20,
13th Nov. 1907, lot 533. |
| FR2 | c2 | a. Ratto, 12th May 1925, lot 1052. |
| | c5 | a. Trier Hoard II 1947. |
| | c9 | a. Gorny 134, 11th Oct. 2004, lot 2736.
b. Via Po Hoard 252. |
| | c10 | a. Baranowski 1929, lot 1194.
b. Trier Hoard II 1948. |
| IMP1 | c2 | a. Bayerische Vereinsbank FPL 15th September 1977,
lot 222. |
| | c5 | a. Vienna 8139.
b. Paris 521.
c. BRB (Liberchies Hoard 213). |
| | c6 | a. Paris Mionnet 6. |
| J1 | c3 | a. Berlin von Gansauge 7.30 g.
b. Ars Classica XVI (BM cast collection) = MMAG |

79, 28th Feb. 1994, lot 504 = MMAG 92, 22th Nov.
2002, lot 69.
c. Trier Hoard II 1945.

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|----|-----|---|
| J2 | c8 | a. Vienna 8104.
b. Paris 512. |
| | c9 | a. Trier Hoard II 1944. |
| J3 | c2 | a. <i>BMC</i> 513. |
| | c10 | b. Arquennes Hoard 361. |
| | c6 | a. Hermitage OH-A3/65Д 1839. |
| J4 | c3 | a. Via Po Hoard 242. |
| P1 | c6 | a. Glendining, 20th Feb. 1951 (Ryan Collection),
lot 1724 = <i>BMC</i> 512.
b. Vienna 36682.
c. Via Po Hoard 233.
d. Lanz 36, 21st April 1986, lot 647. |
| | c4 | a. BRB (du Chastel 509). |
| | c5 | a. ANS 1944.100.43617. |
| | c14 | a. Berlin 1869 Peytrignet 6.99 g. |

P2 (= P1 in group D)

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|----|--|
| c1 | a. Hunter 171.
b. Paris 502.
c. Peus 382, 26th April 2005, lot 441.
d. Rome, MC 3506. |
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RP1 (= RP1 in pre-Optimus coinage)

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|-----|--|
| c2 | a. Hunter 172. |
| c5 | a. Newlands 1947 (BM cast collection).
b. Paris 543.
c. Arquennes Hoard 365.
d. ANS 1958.214.21 (sold to Leu 5/69). |
| c8 | a. BRB (du Chastel 508).
b. Vatican A/17/13. |
| c14 | a. Künker 43, 29th Sept. 1998, lot 297. |

Group D

Obverse legend: IMP CAES NER TRAIANO OPTIMO AVG GER DAC.

Reverse legend: P M TR P COS VI P P S P Q R or descriptive reverse.

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|-----|-----|---|
| BE1 | d2 | a. Hunter 175.
b. BRB (Liberchies Hoard 228).
c. BRB (Liberchies Hoard 229).
d. Arquennes Hoard 379.
e. Sangiorgi 15th April 1907 (Strozzi Coll.), lot 1882. |
| | d21 | a. BMC 546.
b. Arquennes Hoard 380.
c. ANS 1001.1.30094.
d. Ars Classica XIII, 27th June 1928 lot 1230.
e. Hermitage OH-A3/65Д 1852. |
| BE2 | d11 | a. Vienna 8068.
b. Trier Hoard II 1968.
c. Trier Hoard II 1969.
d. Vatican A/16/39. |
| BE3 | d3 | a. Vienna 8069. |
| BE4 | d12 | a. Vienna 8071.
b. Arquennes Hoard 383.
c. J. Vinchon, 28 Feb. 1972, lot 116.
d. R. Ball FPL 39, 1937, lot 1337.
e. Vinchon, 3th Dec. 1984, lot 30 (face and right hand tooled on obverse). |
| | d26 | a. Ars Classica XVII, 3rd Oct. 1934, lot 767 = Helbing 70, 9th Dec. 1932, lot 80 = American Numismatic Association 16–21st August 1952, lot 1579. |
| BE5 | d22 | a. Paris Rothschild 254.
b. BMC 547.
c. ANS 58.214.15.
d. Trier Hoard II (RIC 347 7.28 g).
e. Santamaria, 25th May 1926, lot 349. |
| | d55 | a. BRB (Liberchies Hoard 230). |
| | d61 | a. Arquennes Hoard 378. |
| BE6 | d25 | a. Glendining, 20th Feb. 1951 (Ryan Collection), lot 1735 = Glendining, 3rd May 1967, lot 71. |

- d23 a. NAC O, 13th May 2004, lot 1988 = MMAG 17, 2nd December 1957, lot 432.
- BE7 d27 a. Ars Classica XVII, 3rd Oct. 1934, lot 766.
- BE8 d8 a. Villach Hoard 132.
a. Bourgey, 6th December 1961, lot 42 = Vinchon, 11th April 1988, lot 590.
- d40 a. Paris 535.
b. Erla Hoard 532.
c. Trier Hoard II (RIC 347 7.08 g).
- BE9 d46 a. BM 1964 12-3-109 (Clark).
c. Hamburger, 19th Oct. 1925, lot 791 = Kastner 12, 30th Nov. 1976, lot 256.
d. Schulman, 14th Feb. 1955, lot 1353.
- d52 a. London 39.
- BE10 d47 a. *BMC* 454.
b. Frankfurter Münzhandlung 118, June 1971, lot 9 = Künker 38, 29th Sept. 1997, lot 328.
- BE11 d1 a. Arquennes Hoard 376.
- BE12 d1 b. Arquennes Hoard 381.
d60 c. Arquennes Hoard 377.
- BE13 d62 a. Arquennes Hoard 382.
b. Via Po Hoard 231.
- BE14 d21 a. Hess 257, 12th Nov. 1986, lot 280.
b. Florence 289.
- d63 a. Milan 147 = Hess, 28th April 1936, lot 1212 = MMAG 38, 6th Dec. 1968, lot 420.
b. Schulman, 31st May 1938, lot 321 = Helbing 70, 9th December 1932, lot 79.
c. Hermitage OH-A3/100Д 472.
- d67 a. Künker 46, 9th March 1999, lot 244.
- d71 a. Trier Hoard II (RIC 347 6.84 g).
- FR1 d4 a. Hunter 185.
b. Baldwin's May 1924 (BM cast collection) = Hess 257, 12th Nov. 1986, lot 277.
c. Berk 138, 1st June 2004, lot 28.

- d. Milan 155.
e. Adolph Hess Auction 252, 25th May 1982, lot 255.
- d32 a. Berlin von Gansauge (1873) 7.27 g (reverse has a less advanced state of wear than Hunter coin [FR1/d4.a], no damage on first S or following P, some damage on following S; wear on obverse die is about the same as FR5/d32.a).
- d64 a. Diyarbakır Hoard 143.
- d68 a. Coin Galleries, 27th Feb. 2001, lot 11.
b. Glendining, 21st Sept. 1960, lot 865.
- FR2 d5 a. Hunter 186.
- d38 a. Paris Rothschild 239.
b. BRB (Liberchies Hoard 218).
c. Arquennes Hoard 368.
d. Hermitage OH-A3/65Д 1841.
- d21 a. Oxford (number not available).
- d46 a. Helbing 63, 29th April 1931, lot 593 = Cahn 71, 14th October 1931, lot 1554.
b. Merzbacher 15th Nov. 1910 lot 1593 = Naville II, 12th June 1922 lot 618.
c. Kestner 104.
- FR3 d8 a. Arquennes Hoard 367.
b. Villach Hoard 128.
c. Glendining, 20th Feb. 1951 (Ryan Collection), lot 1728 = MMAG 12, 11th June 1953, lot 808 = Leu 2, 25th April 1972, lot 388.
- d50 a. BMC 574.
b. Bern RKo874.
c. MMAG 19, 5th June 1959, lot 208.
d. Munich, private collection.
- FR4 d9 a. Ars Classica XVII, 3rd Oct. 1934, lot 758.
b. BMC 569.
c. Munich 21 29 (no acc. Number).
d. ANS 1944.100.43630.
e. Helbing, 9th Dec. 1932, lot 70.
f. Hirsch 189, 7th Feb. 1996, lot 546 = NAC "Autumn Sale" 26th Oct. 1995, lot 583.
- d54 a. BRB (Liberchies Hoard 217).

- b. Frey, 15th July 1959, lot 899.
 c. Santamaria 7th March 1910 (Hartwig Coll.), lot 1245.
- d57 a. F. l'Orange, 10th Feb. 1923, lot 124.
 b. Trier Hoard II 1949.
- FR5 d13 a. Vienna 8090.
 d24 a. Naville-Ars Classica XII, 18th Oct. 1926, lot 2835.
 d32 a. MMAG 93, 16th Dec. 2003, lot 145 (obverse shows fair amount of damage, especially in field, but less than the obverse of J7/d32.a).
 d33 a. Ratto, 8th Feb. 1928, lot 2543.
 d48 a. BMC 572.
 d58 a. MMAG 3rd Dec. 1948, lot 566.
 b. Baranowsky, 25th Feb 1931, lot 1689.
 d74 a. Hermitage OH-A3/65Д 1840.
- FR6 d14 a. Vienna 8091.
 b. Spink 4026, 15th April 2004, lot 128 (obverse shows damage to die at base of M in Optimo).
 c. Kastner 4, 27th Nov. 1973, lot 234 (die wear as FR6/d14.b).
 d. NAC 24, 5th Dec. 2002, lot 75 = NAC 6, 11th March 1993, lot 418 = Stack's, 7th Dec. 1994, lot 2007 (die wear on obverse at base of M and at end of upper wreath-tie, the latter not visible on FR6/d14.b).
 e. Hess 6th Jan. 1926 (Löbbecke Coll.), lot 1119 (die wear as FR6/d14.d).
 d15 a. BRB (Liberchies Hoard 219).
- FR7 d23 a. BMC 570.
 b. Madrid 207.
 c. Trier Hoard II 1950.
 d. Glendining 22th Oct. 1969, lot 13.
 d35 a. BRB (Liberchies Hoard 216).
 b. Münzhandlung Basel VI, 18th March 1936, lot 1660.
 c. Hess, 5th April 1955, lot 87.
 d36 a. Paris 516.
 b. LHS 95, 25th October 2005, lot 799.
 d45 a. BMC 571.

- b. Via Po Hoard 253.
 c. Trier Hoard II 1951.
 d. Gorny 40, 7th April 1988, lot 422.
 e. Hermitage OH-A3/100Д 468.
- FR8 d28 a. CNG 57, 4th April 2001, lot 1197.
 b. Villach Hoard 129.
 c. Santamaria 29th Nov. 1920, lot 559.
- FR9 d6 a. Trier Hoard II 1957.
 d29 a. Coin Galleries, 18th April 2001, lot 14.
 b. CNG 57, 4th April 2001, lot 1198 (obverse shows die
 chip above R in NER, not present on FR9/d29.a).
 c. Arquennes Hoard 372 (no chip above R on
 obverse).
 d. Berlin 1839/71 (Fund von Grevenbroich, 7.19 g) (no
 chip above R).
 e. Brigetio Hoard 49 (very worn, does not appear to
 have chip above R).
 f. Trier Hoard II 1956.
 g. Gorny 48, 2nd April 1990, lot 835 (shows chip above R).
- d39 a. Paris 515.
 b. BMC 576.
 c. Arquennes Hoard 371.
- FR10 d6 a. Erla Hoard 508.
 d31 a. Leu 83, 6th May 2002, lot 757 = Leu 33, 3rd May
 1983, lot 48 = Hess-Leu 36, 17th April 1968, lot 472.
- FR11 d3 a. CNG 49, 17th Mar. 1999, lot 1551 = Cahn 80, 27th
 Feb. 1933, lot 654a.
- FR12 d5 a. Berk 138, 1st June 2004, lot 27.
 b. Bourgey, 6th May 1971, lot 150.
- FR13 d24 a. Trier Hoard II 1952.
 b. NAC N, 26th June 2003, lot 1942.
 d56 a. Arquennes Hoard 369.
 b. Vatican A/15/39.
 c. Lanz 78, 25th Nov. 1996, lot 591.
- FR14 d37 a. Paris Rothschild 237.
 b. ANS 1001.1.22271.

- c. Florence 274.
- d49 a. Egger 41, 18th Nov. 1912, lot 1190.
- d70 a. Trier Hoard II 1955.
- FR15 d49 a. *BMC* 573.
- d64 a. Milan 156.
- FR16 d51 a. *BMC* 575.
- d57 a. Arquennes Hoard 370.
- FR17 d47 a. Trier Hoard I 5.
- d51 a. BRB (Liberchies Hoard 214).
- b. BRB (Liberchies Hoard 215).
- c. Arquennes Hoard 366.
- FR18 d2 a. Trier Hoard II 1954.
- d27 a. Hamburger, 12th Sept. 1922, lot 82.
- d65 a. ANS 58.214.17 = Baranowsky FPL 1929, lot 1195.
- FR19 d16 a. Glendining 16th Nov. 1950, lot 1288.
- FR20 d66 a. Münzhandlung Basel VI, 18th Mar. 1936, lot 1659.
- FR21 d5 a. Madrid 208.
- FR22 d54 a. Trier Hoard II 1955.
- FR23 d30 a. Bonn, Rheinisches Landesmuseum.
- J1 d1 a. Cambridge Y730 1936.
- b. LHS 95, 25th Oct. 2005, lot 800.
- d48 a. *BMC* 533.
- d51 a. ANS 1001.1.30095.
- b. Kestner 106.
- c. Lanz 30, 26th Nov. 1984.
- J2 d3 a. Hunter 177.
- b. Vatican A/16/35.
- c. Via Po Hoard 235.
- d. Trier Hoard II 1964.
- e. Peus 314, 31th Oct. 1985, lot 406.
- f. Vinchon, 20th Nov. 1992, lot 107.
- d44 a. Paris Rothschild 252 (die wear on reverse, especially a crack running below SPQR, not seen on reverse of

- J2/d3.a).
b. Madrid 211.
- J3 d14 a. Hermitage OH-A3/65Д 1851.
 d15 a. Vienna 8106.
 d66 a. Florence 291.
- J4 d16 a. Vienna 8107.
 b. Bourgey, 24th Nov. 1995, lot 39.
 d69 a. Hess, 2nd April 1958, lot 316.
- J5 d17 a. Vienna 8108.
 b. Hirsch 199, 6th May 1998, lot 473.
 c. Florence 288.
- J6 d43 a. Paris Rothschild 251.
 b. Glendining, 23rd April 1970, lot 290 = Glendining,
 16th May 1979, lot 93.
 c. ANS 56.184.32 (obverse shows die wear, especially at
 end of legend and on wreath ties, not seen on obverses
 of J6/d43.a or b).
- J7 d24 a. Paris 534.
 b. Milan 142.
 d32 a. Berk 84, 19th Jan. 1995, lot 25 (shows earlier stage of
 wear than FR5/d32.a).
 d58 a. Arquennes Hoard 373.
 b. Arquennes Hoard 374.
 c. ANS 1958.214.22 (sold 9/68).
- J8 d24 a. BRB (Liberchies Hoard 225).
 b. Hess 257, 12th Nov. 1986, lot 279.
- J9 d28 a. BRB (Liberchies Hoard 226).
 d59 a. Arquennes Hoard 375.
- J10 d21 a. Erla Hoard 521.
- J11 d60 a. Trier Hoard II 1965.
- S1(= S5 in group F)
 d46 a. Hess Leu, 2nd April 1958, lot 314.
- P1(= P2 in group C, but with marked die wear)
 d10 a. Vienna 8065.

- b. *BMC* 532.
- PV1 d41 a. Paris Rothschild 256.
 b. *BMC* 582.
 c. *BMC* 587.
 d. Madrid 212.
 e. Berk 35, 12th Feb. 1985, lot 22.
- RA1 d41 a. *BMC* 589.
 d41 a. Paris 540.
- RA2 (= RA3 in group e)
 d14 a. Gorny & Mosch 133, 11th Oct. 2004, lot 451 (this
 and the following coin show distinct obverse die wear
 at base of O and M in Optimo).
 b. *BMC* 588A.
- RA3 (= RA1 in group e)
 d52 a. *BMC* 588.
 d73 a. British Museum card file Regna Adsignata 489.
- SA1 d6 a. Hunter 189.
 b. Florence 297.
 d15 a. Glendining, 19–20th July 1967, lot 102.
 b. Hermitage OH-A3/65Д 1856.
 d20 a. Vienna 8122 (reverse shows die wear, especially
 small blob in right field, not present on SA1/d6.a).
 b. Paris 544 (reverse shows same state of die wear as
 SA1/d20.a).
 c. Coin Galleries, 9th Nov. 1988, lot 15 (worn coin, die
 wear as above).
 d42 a. Paris Rothschild 247 (reverse shows even greater die
 wear than SA1/d20.a–c, small blob has become large).
 b. NAC, “Autumn Sale” 26th Oct. 1995, lot 582 (same
 degree of wear as above).
- SA2 d18 a. Vienna 8120.
 b. Florence 293.
 d53 a. *BMC* 586.
 b. Arquennes Hoard 385.
 c. ANS 1001.1.30093.
 d. Schulman, 20th May 1966, lot 2388 = Lanz 30, 26th

- Nov. 1984, lot 515.
- SA₃ d₁₉ a. Vienna 8121.
b. BRB (Liberchies Hoard 231).
c. Trier Hoard II 1971.
- d₃₀ a. Gorny & Mosch 125, 13th Oct 2003, lot 467.
b. BRB (Liberchies Hoard 232).
- d₃₅ a. NAC 25, 25th June 2003, lot 449.
b. NAC 27, 12th May 2004, lot 383.
c. NACN, 26th June 2003, lot 1940 (obverse die shows wear in front of nose, on G in AVG).
d. Arquennes Hoard 384.
e. Via Po Hoard 257.
- d₅₆ a. Superior 303rd Apr. 1971, lot 116.
- SA₄ d₂₄ a. Trier Hoard II 1970.
- d₃₃ a. CNG 42, 29th May 1997, lot 890 = Künker 34, 8th Oct. 1996, lot 350.
b. BMC 585.
c. Arquennes Hoard 387.
d. Arquennes Hoard 386.
e. Milan 160.
f. Erla Hoard 544.
g. Vinchon, 9th Dec. 1983, lot 201.
- SA₅ d₇₀ a. Vatican A/17/14.
b. British Museum card file, source unknown, labelled "Salus 421."
- V₁ d₇ a. Hunter 190.
b. Paris 561.
c. Trier Hoard II 1973.
d. Lanz 92, 4th June 1999, lot 533.
- d₄₃ a. Trier Hoard II 1974.
b. Vinchon 3rd March 1975, lot 109 = Baranowsky 1929 (Arturo Cuzzi Coll.), lot 616.
c. UBS 65, 24th Jan. 2006, lot 189.
- d₄₅ a. Trier Hoard II 1972.
b. Trier Hoard II 1975.
c. Santamaria, 13th Mar. 1953, lot 89.
- V₂ d₇₂ a. Rome, MC 3531.

Group E

Obverse legend: IMP CAES NER TRAIAN OPTIM AVG GER DAC PARTHICO*Reverse legend:* P M TR P COS VI P P S P Q R or descriptive reverse

- | | | |
|-----|-----|---|
| PC1 | e1 | a. Hunter 193.
b. MMAG 43, 12th Nov. 1970, lot 333. |
| PC2 | e2 | a. Hunter 194.
b. Ars Classica XVII, 3rd Oct. 1934, lot 1367. |
| PC3 | e4 | a. Vienna 8152.
b. Paris 522.
c. Vatican (number not available).
d. Kestner 105.
e. Stack's, 30th April 1964, lot 49. |
| | e2 | a. Paris 523.
b. BMC 606.
c. Trier Hoard II 1961. |
| | e12 | a. Ars Classica XVII, 3rd Oct. 1934, lot 760. |
| | e15 | a. Berlin 1872/409 7.23 g. |
| | e25 | a. Erla Hoard 509.
b. ANS 1980.109.162. |
| PC4 | e5 | a. Vienna 8153.
b. Berlin Hermann 7.12 g. |
| | e7 | a. Florence 277.
b. Trier Hoard II 1960. |
| | e11 | a. BRB (Liberchies Hoard 220).
b. Milan 164.
c. Rome, MC 3514.
d. O'Hagan 273 (BM cast collection) = Sotheby, 4th May 1908, lot 271.
e. Schulman, 14th March 1969, lot 15 = Münzhandlung Basel VI, 18th March 1936, lot 1661.
f. Hess 9th May 1951, lot 95.
g. Peus 270, 10th June 1969, lot 233.
h. Florence 278. |
| PC5 | e2 | a. Triton VII, 24th Jan. 2004, lot 918.
b. MMAG 10, 22nd June 1951, lot 39.
c. Helbing, 22nd March 1926, lot 271. |

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|------|-----|--|
| | e15 | a. NAC 25, 25th June 2003, lot 448 (reverse die of this coin shows more wear than PC5/e2.a, especially on the second and fourth P and the third C). |
| | e22 | a. BRB (Liberchies Hoard 221). |
| PC6 | e11 | a. Bern RKo879.
b. Trier Hoard II 1959. |
| | e13 | a. Lanz 97, 22th May 2000, lot 563 = Hess-Leu 24, 16th April 1964, lot 296. |
| PC7 | e14 | a. CNG 50, 23rd June 1999, lot 1487.
b. Santamaria, 24th Jan. 1938, lot 457. |
| | e30 | a. Hauck & Aufhäuser 18, 5th Oct. 2004, lot 459. |
| PC8 | e16 | a. Peus 378, 28th April 2004, lot 565 = Spink 3014, 8th Oct. 2003, lot 182. |
| | e14 | a. Spink 4026, 15th April 2004, lot 31 = Cahn 71, 14th Oct. 1931, lot 1557 = Bourgey, 18th Dec. 1912, lot 123. |
| PC9 | e19 | a. BMC 604.
b. Milan 165.
c. Via Po Hoard 245. |
| | e21 | a. BMC 603.
b. Arquennes Hoard 388.
c. Hess-Leu, 5th May 1965, lot 404.
d. Coin Galleries, 26th Oct. 1961, lot 385 = Berk 82, 13th July 1994, lot 17. |
| PC10 | e9 | a. Erla Hoard 510. |
| | e26 | a. Sangiorgi 15th April 1907 (Strozzi Coll.), lot 1879.
b. Santamaria, 21st Nov. 1932, lot 215. |
| PC11 | e12 | a. Berk 69, 22th Jan. 1992, lot 7. |
| | e18 | a. Hermitage OH-A3/100Д 469. |
| PC12 | e27 | a. Trier Hoard II 1958. |
| PC13 | e21 | a. Hermitage OH-A3/65Д 1845. |
| PR1 | e7 | a. Vienna 8160. |
| RA1 | e3 | a. Hunter 197.
b. Vatican A/17/11.
c. Erla Hoard 543. |

- d. Bern RK0920.
- e17 a. Paris 541.
b. NAC 11, 29th April 1998, lot 423.
- e20 a. Via Po Hoard 244.
b. MMAG 52, 19th June 1975, lot 608.
c. Lanz 28, 7th March 1984, lot 496.
- e24 a. Arquennes Hoard 391.
b. Lanz 66, 22th Nov. 1993, lot 500.
c. Berlin von Gansauge 7.15 g.
- RA2 e6 a. Vienna 8165.
- RA3 e8 a. Vienna 8166.
b. Rome, MC 3521.
c. *BMC* 614.
d. Arquennes Hoard 390.
e. Erla Hoard 542.
f. Berk 86, 11th July 1995, lot 18A.
g. Berlin 1855/17584.
h. Madrid 213.
- e10 a. Glendining, 20th Feb. 1951 (Ryan Collection), lot 1737.
- e28 a. British Museum card file Regna Adsignata 380.
- e29 a. British Museum card file Regna Adsignata 898.
- RA4 e9 a. BRB (du Chastel 511).
- S1 e18 a. Paris 533.
b. MMAG 64, 30th Jan. 1984, lot 251.
- e23 a. BRB (Liberchies Hoard 227).
b. Arquennes Hoard 389.
c. Villach Hoard 121.
- S2 e23 a. British Museum card file Sol 597.
- V1 e7 a. *BMC* 612.
b. Hamburger 96, 25th Oct. 1932, lot 878 = Helbing, 17th June 1929, lot 3799.
c. Vitalini, 9th March 1891, lot 523.
- e9 a. Vienna 8175.
b. Paris 265.
c. BRB (Liberchies Hoard 233).
d. BRB (Liberchies Hoard 234).

e. Florence 310.

f. Münzhandlung Basel, 18th March 1936, lot 1676.

g. NAC H, 30th April 1998, lot 1935.

e28 a. Winterthur R25.

Group F

Obverse legend: IMP CAES NER TRAIAN OPTIM AVG GERM DAC

Reverse legend: PARTHICO P M TR P COS VI P P S P Q R

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|----|-----|--|
| H1 | f18 | a. Formerly Paris (cast illustrated by Strack, Pl. X.260).
b. Berk 94, 16th Jan. 1997, lot 11 = NAC 24, Dec 5 2002, lot 80. |
| S1 | f1 | a. Cambridge Y731 1936.
b. BRB (Liberchies Hoard 222).
c. Arquennes Hoard 400.
d. Augsburg Hoard 10. |
| | f2 | a. Vinchon. 6th May 1955. lot 327. |
| | f13 | a. Arquennes Hoard 401.
b. Künker 97, 7th March 2005, lot 1383 = MMAG 93, 16th Dec. 2003, lot 147 (reverse has less die wear than S1/f1.a, especially around first and last letters of legend). |
| | f19 | a. Munich 81309.
b. Vatican A/15/34.
c. Lanz (Graz), 8th Dec. 1972, lot 255.
d. Darmstadt, Landesmuseum 1956.823.103. |
| | f38 | a. Gorny 46, 30th Oct. 1989, lot 569. |
| | f43 | a. Trier Hoard II 1963. |
| | f45 | a. Hermitage OH-A3/100Д 470. |
| S2 | f2 | a. Hunter 201. |
| S3 | f2 | a. Via Po Hoard 248.
b. Egger 39, 15th Jan. 1912 (Vienna duplicate) lot 865. |
| | f3 | a. Vienna 8155. |
| | f6 | a. Milan 169. |
| | f16 | a. CNG 39, 18th Sept. 1996, lot 1433. |
| | f36 | a. Sotheby, 26th June 1974, lot 18 = Spink, 15th Feb. 1977, lot 325 = Spink 24th Nov. 1982, lot 203. |
| | f44 | a. Hermitage OH-A3/65Д 1848. |

- S4 f3 a. Sambon & Canessa 18. Nov. 1907 (Martinetti Coll.), lot 1856.
- f4 a. Vienna 33586 (die wear on obverse at forehead lock).
 b. Peus 297, 3rd April 1979, lot 366.
- f5 a. Vienna 8156.
 b. Paris Rothschild 242.
- f10 a. Naville III, 16th June 1922, lot 50 = Glendining, 27th Sept. 1962, lot 186 = MMAG FPL 231, April 1963, lot 53.
 b. Paris Rothschild 240.
 c. Hermitage OH-A3/65Д 1847.
- f42 a. Trier Hoard II 1962.
- S5 (= O1 in group D)
- f2 a. Arquennes Hoard 399.
 b. Gorny 44, 3rd April 1989, lot 772.
- f6 a. Stockholm, Myntkabinettet.
 b. Ars Classica XVII, 3rd Oct. 1934, lot 762.
 c. Sotheby 19th Jan. 1914 (Cumberland Clark Coll.) lot 375 = Glendining, 20th Feb. 1951 (Ryan Collection), lot 1732.
 d. Hirsch, 29th March 1955, lot 560.
- f8 a. Ratto 8th Feb. 1928 (R. H. Morcom) lot 93 (BM cast collection) = Raymond, 31st Jan. 1939, lot 116.
 b. Hirsch XX, 13th Nov. 1907, lot 554.
 c. Schulman, 5th May 1913, lot 155.
- f22 a. London 8.
- f27 a. Arquennes Hoard 396 = Gorny 48, 2nd April 1990, lot 836.
 b. Florence 280.
- f40 a. Madrid 209.
- S6 f7 a. Ars Classica XVII, 3rd Oct. 1934, lot 763 = Helbing 70, 9th Dec. 1932, lot 76 = Crédit Suisse FPL 19, 1976, lot 35 = Crédit Suisse FPL 13, 1974, lot 40.
 b. Santamaria, 29th Nov. 1920, lot 560 = Stack's, 14th June 1971, lot 14 = Helbing, 20th March 1928, lot 518.
 c. Hess-Leu 22, 4th April 1963, lot 173 = MMAG, 22–23rd June 1951, lot 40.
 d. Jameson 93.
- f35 a. Sotheby, 9th March 1936, lot 219.

- S7 f4 a. MMAG FPL 198, March 1960, lot 40 = MMAG FPL 304, Sept. 1969, lot 27 = MMAG FPL 327, Sept. 1971, lot 17 = Stack's, 19th June 1969 (Fowler Collection), lot 360.
 b. Peus 361, 3rd Nov. 1999, lot 579 = Berk 34, 25th Oct. 1984, lot 118.
- f9 a. Glendining 3rd Dec. 1929 (Nordheim, Anderson Colls.), lot 834.
 b. NAC O, 13th May 2004, lot 1987 = Myers & Adams 5, 15th March 1973, lot 382.
 c. Vinchon 11th April 1988, lot 588.
 d. Hermitage OH-A3/65Д 1849.
- f16 a. Ars Classica XVII, 3rd Oct. 1934, lot 761 = Hess-Leu, 12th April 1962, lot 459 = Hess-Leu 3rd May 1983, lot 49 = NAC 7, 2nd March 1994, lot 728 = NAC 9, 16th April 1996, lot 861.
 b. Helbing, 20th March 1928, lot 517.
 c. Naville II, 12th June 1922, lot 624 = (most likely) Santamaria, 24th Jan. 1938, lot 459.
- S8 f11 a. Paris 524.
 b. O'Hagan 273 (BM cast collection) = Sotheby, 4th May 1908, lot 273 = NAC 16th Nov 1994 (Steinberg Coll.), lot 379 = Lanz 34, 25th Nov. 1985, lot 531.
- f25 a. Arquennes Hoard 397.
 b. Arquennes Hoard 393.
 c. Rome, MC 3515.
 d. Stack's, 20th Nov. 1967, lot 866.
 e. Naville II, 12th June 1922, lot 625.
- S9 f12 a. Baldwin 39, 11th Oct. 2004, 1438.
 b. Arquennes Hoard 395.
 c. Hess-Leu, 5th May 1965, lot 405 = Kricheldorf, 7th July 1964, lot 284.
 d. Coin Galleries, 14th Dec. 2004, lot 35.
 e. Berlin von Gansauge 7.20 g.
 f. Bern RK5922.
 g. Boston 00.291.
- f15 a. Gorny 50, 24th Sept. 1990, lot 571 (obverse has notably less damage on ties and back of neck than obverse of S11/f15.a).

- f20 a. Brenot and Metzger (1992, 329, cat. 37, plate. 1).
- f23 a. BRB (Liberchies Hoard 223).
b. Helbing 70, 9th Dec. 1932, lot 74.
c. Hermitage OH-A3/100Д 471.
- f31 a. Ratto, 19th Jan. 1956, lot 117.
- S10 f14 a. Coin Galleries, 13th April 2005, lot 18.
b. Arquennes Hoard 392 = Künker 97, 7th March 2005, lot 1384 = NAC N, 26th June 2003, lot 1941.
c. Cahn 61, 4th Dec. 1928, lot 835.
- f28 a. Erla Hoard 512.
- f41 a. Madrid 210.
- S11 f15 a. CNG, Classical Numismatic Review XVI.1, 1990, lot 230.
b. Baranowsky, 25th Feb. 1931, lot 1694 = Hess 194, 25th March 1929 (Vogel Sale), lot 796.
- f30 a. Santamaria 26th June 1950 (Magnaguti Coll. III), lot 66 = Ratto FPL 1939, lot 78 = MMAG 44, 15th June 1971, lot 64.
b. Santamaria, 24th Jan. 1938, lot 548.
c. Schulman, 30th Jan. 1956, lot 2073.
d. Hess 257, 12th Nov. 1986, lot 278.
- f34 a. Hess, 28th Apr. 1936, lot 1211.
- S12 f12 a. Erla Hoard 513.
- f17 a. Gemini I, 11th Jan. 2005, lot 353.
- S13 f20 a. Paris Rothschild 239.
b. BMC 621.
c. Via Po Hoard 247.
- S14 f21 a. Paris Rothschild 241.
- f26 a. Peus 34, 2nd Nov. 1994, lot 822.
- S15 f4 a. BMC 622.
b. BMC 623.
c. Erla Hoard 514.
d. Florence 279.
- f42 a. British Museum card file Sol 169.
b. Hermitage OH-A3/65Д 1846.
- S16 f24 a. BRB (Liberchies Hoard 224).

- | | | |
|-----|-------------------|---|
| S17 | f2 | a. Arquennes Hoard 398. |
| S18 | f26 | a. Arquennes Hoard 394.
b. Münzhandlung Basel VI, 18th March 1936, lot 1662.
c. LHS 95, 25th Oct. 2005, lot 802. |
| S19 | f23
f28
f32 | a. Hirsch XXIX, 9th Nov. 1910, lot 967.
a. Platt FPL without year (c. 1920) "collection C" [Motte], lot 68.
a. Hirsch 26th Oct. 1954, lot 1357 = Helbing 70, 9th Dec. 1932, lot 75. |
| S20 | f29 | a. Helbing 63, 29th April 1931, lot 595.
b. Santamaria, 18th June 1928, lot 230. |
| S21 | f33
f39 | a. Hess, 18th Dec. 1933, lot 505.
b. Vinchon, 27th Oct. 2000, lot 297.
a. Augsburg Hoard 11. |
| S22 | f26 | a. Glendining (Platt Hall Coll., Part II), 16–21st November 1950, lot 1291. |
| S23 | f37 | a. Gorny 67, 2nd May 1994, lot 474 = Gorny 3rd May 1995, lot 652. |

Forgeries

- Forgery 1 Rome, MC, Forum Traian(i) reverse. Becker.
 Forgery 2 Bern, Historisches Muesum, RK 880. Sol reverse. Paduan.

List of Die Illustrations

The sources of the die illustrations are listed in brief below; full bibliographic information can be found under the relevant entry in the catalogue.

Obverses:

Groups 1–3 (new dies):

- | | |
|-------------------------|-------------------------|
| a57 Arquennes Hoard 353 | b21 BRB |
| a58 Arquennes Hoard 351 | b22 Coin Galleries 27 |
| a59 Berlin 1869 | b23 Maison Polombo 2 |
| a60 Florence 301 | b24 Trier Hoard II 1929 |
| | b25 Gorny |

Group C:

- | | |
|---------------|-------------------------|
| c1 Hunter 171 | c10 Arquennes Hoard 361 |
|---------------|-------------------------|

c2 Hunter 172
 c3 Ars Classica XVI
 c4 Ars Classica XVII
 c5 Newlands 1947
 c6 Ryan 1724
 c7 Vienna 8088
 c8 Vienna 8014
 c9 Gorny 134, 2736

c11 Via Po Hoard 243
 c12 Hirsch 559
 c13 Bourgey 14th Dec. 1934, lot 172
 c14 Künker 197
 c15 NAC 356

Group D:

d1 Cambridge Y730 1936
 d2 Hunter 175
 d3 Hunter 177
 d4 Hunter 185
 d5 Hunter 186
 d6 Hunter 189
 d7 Hunter 190
 d8 Ryan 1728
 d9 Ars Classica XVII
 d10 Vienna 8065
 d11 Vienna 8068
 d12 Vienna 8071
 d13 Vienna 8090
 d14 NAC 75
 d15 Vienna 8106
 d16 Vienna 8107
 d17 Vienna 8108
 d18 Vienna 8120
 d19 Vienna 8121
 d20 Vienna 8122
 d21 Naville xiii lot 1230
 d22 Paris Rothschild 254
 d23 NAC 1988
 d24 Naville XII 2835
 d25 Ryan 1735
 d26 Ars Classica XVII
 d27 Ars Classica XVII
 d28 CNG 57
 d29 CNG 57, 1198
 d30 Gorny 125, 467

d40 Paris 535
 d41 Paris 540
 d42 Paris Rothschild 257
 d43 ANS 56 184 32
 d44 Paris Rothschild 252
 d45 Via Po Hoard 253
 d46 Hamburger lot 791
 d47 BMC 454
 d48 BMC 572
 d49 BMC 573
 d50 MMAG 208
 d51 BMC 575
 d52 London Hoard 39F
 d53 ANS 1001 1 30093
 d54 BNB Liberchies Hoard 217
 d55 BRB 230
 d56 Arquennes Hoard 369
 d57 Arquennes Hoard 370
 d58 MMAG 1948, 566
 d59 Arquennes Hoard 375
 d60 Arquennes Hoard 377
 d61 Arquennes Hoard 378
 d62 Arquennes Hoard 382
 d63 Milan 147
 d64 Milan 156
 d65 ANS 58 214 17
 d66 Basel 1659
 d67 Künker 244
 d68 Coin Galleries 2001, lot 11
 d69 Hess 1958, lot 316

d31 Leu 757
 d32 MMAG 145
 d33 CNG 890
 [d34 not used]
 d35 NAC 449
 d36 Paris 516
 d37 Paris rot 236
 d38 BRB Liberchies Hoard 218
 d39 Paris 515

d70 Trier Hoard II 1953
 d71 Trier Hoard II 684g
 d72 Rome, MC
 d73 BM card 489
 d74 Hermitage 1840

Group E:

e1 Hunter 193
 e2 Hunter 194
 e3 Hunter 197
 e4 Vienna 8152
 e5 Vienna 8153
 e6 Vienna 8156
 e7 Vienna 8160

 e8 Vienna 8166
 e9 Vienna 8175
 e10 Ryan 1737
 e11 O'Hagan 273
 e12 Ars Classica XVII
 e13 Lanz 97, 563
 e14 CNG 1487
 e15 NAC 448
 e16 Peus 565
 e17 Paris 541
 e18 Paris 533
 e19 BMC 604

e20 MMAG 1975, 608
 e21 BMC 603
 e22 BRB Liberchies Hoard 221
 e23 BRB Liberchies Hoard 227
 e24 Lanz 66, 500
 e25 ANS 1980.109.162
 e26 Sangiorgi 15th April 1907
 (Strozzi Coll.), 1879
 e27 Trier Hoard II 1958
 e28 BM card 380
 e29 BM card 898
 e30 Hauck & Aufhäuser 2004

Group F:

f1 Cambridge Y731 1036
 f2 Hunter 201
 f3 Vienna 8155
 f4 Vienna 33586
 f5 Vienna 8156
 f6 Ars Classica XVII
 f7 Ars Classica XVII

f30 Santamaria 66
 f31 Ratto 117
 f32 Hirsch 1357
 f33 Hess 505
 f34 Hess 1211
 f35 Sotheby 1936, 219
 f36 Sotheby 1974, 18

- | | |
|--------------------------|-------------------------|
| f8 Morcom 93 | f37 Gorny 1994, 474 |
| f9 Nordheim | f38 Gorny 1989, 569 |
| f10 Naville III, 50 | f39 Augsburg Hoard 16 |
| f11 O'Hagan 273 | f40 Madrid 209 |
| f12 Baldwin 39, 1438 | f41 Madrid 210 |
| f13 Künker 97 1383 | f42 Trier Hoard II 1962 |
| f14 Künker 97 1384 | f43 Trier Hoard II 1963 |
| f16 CNG 1433 | f44 Hermitage 1848 |
| f17 Gemini | f45 Hermitage 470 |
| f18 NAC 80 | |
| f19 Munich 21 30 | |
| f20 Paris Rothschild 239 | |
| f21 Paris Rothschild 241 | |
| f22 London Hoard o8F[1] | |
| f23 BRB Lib. 223 | |
| f24 BRB Lib. 224 | |
| f25 Arquennes Hoard 397 | |
| f26 Glendinging 1291 | |
| f27 Arquennes Hoard 396 | |
| f28 Platt 68 | |
| f29 Helbing 595 | |

Reverses:

Groups 1–3:

- BE11 Arquennes Hoard 353
 BE12 Trier Hoard II 1938
 C5 NAC 73
 FR3 Coin Galleries 27
 FR4 Hermitage 1842
 J11 Gorny
 P8 MMAG 123
 S10 Rome, MC 3528

Group C:

- | | | |
|-----------------------|---------------------|-------------------|
| BE1 Ars Classica XVII | IMP1 Vienna 8139 | P1 Ryan 1724 |
| BE2 BMC 518 | J1 Ars Classica XVI | P2 Hunter 171 |
| BE3 Via Po Hoard 243 | J2 Vienna 8104 | RP1 Newlands 1947 |
| FR1 Vienna 8088 | J3 BMC 513 | |
| FR2 Gorny 134, 2736 | J4 Via Po Hoard 242 | |

Group D:

BE1 Hunter 175	FR1 Hunter 185	J1 Cambridge 1936	SA1 Hunter 189
BE2 Vienna 8068	FR2 Hunter 186	J2 Hunter 177	SA2 Vienna 8120
BE3 Vienna 8069	FR3 Ryan 1728		SA3 Vienna 8121
BE4 Vienna 8071	FR4 Ars Classica XVII	J3 Vienna 8106	SA4 CNG 890
BE5 Paris Rothschild 254	FR5 Vienna 8090	J4 Vienna 8107	SA5 BM card 421
BE6 Ryan 1735	FR6 Vienna 8091	J5 Vienna 8108	
BE7 Ars Classica XVII	FR7 Paris 516	J6 Paris Rothschild 251	V1 Hunter 190
BE8 Paris 535	FR8 CNG 57	J7 Paris 534	V2 Rome, MC
BE9 London Hoard 39B	FR9 CNG 57 1198	J8 BRB Lib. 225	
BE10 BMC 454	FR10 Leu 757	J9 BRB Lib. 226	
BE11 Arquennes Hoard 376	FR11 CNG 1551	J10 Erla Hoard 521	
BE12 Arquennes Hoard 377	FR12 Berk 27	J11 Trier Hoard II 1965	
BE13 Arquennes Hoard 382	FR13 NAC 1942		
BE14 Milan 147	BFR14 Paris Rothschild 236	P1 Vienna 8065	
	FR15 Milan 156		
	FR16 BMC 575	PV1 Paris Rothschild 256	
	FR17 BRB Lib 214		
	FR18 ANS 58 214 17	RA1 Paris 450	
	FR19 Glendining 1288	RA2 Gorny 133, 451	
	FR20 Basel Handel 1659	RA3 BMC 588	
	FR21 Madrid 208		
	FR22 Trier Hoard II 1955	S1 Hess-Leu 314	
	FR23 Bonn		

Group E:

PC1 Hunter 193	PR1 Vienna 8160
PC2 Hunter 194	
PC3 Vienna 8152	R1 Hunter 197
PC4 Vienna 8153	R2 Vienna 8165
PC5 Triton VII	R3 Vienna 8166
PC6 Lanz 97, 563	R4 BRB du Chastel 511
PC7 CNG 1487	
PC8 Peus 565	S1 Paris 533
PC9 BMC 603	S2 BM card file 597
PC10 Erla Hoard 510	
PC11 Berk 1992, 7	V1 Vienna 8175
PC12 Trier Hoard II 1958	
PC13 Hermitage 1845	

Group F:

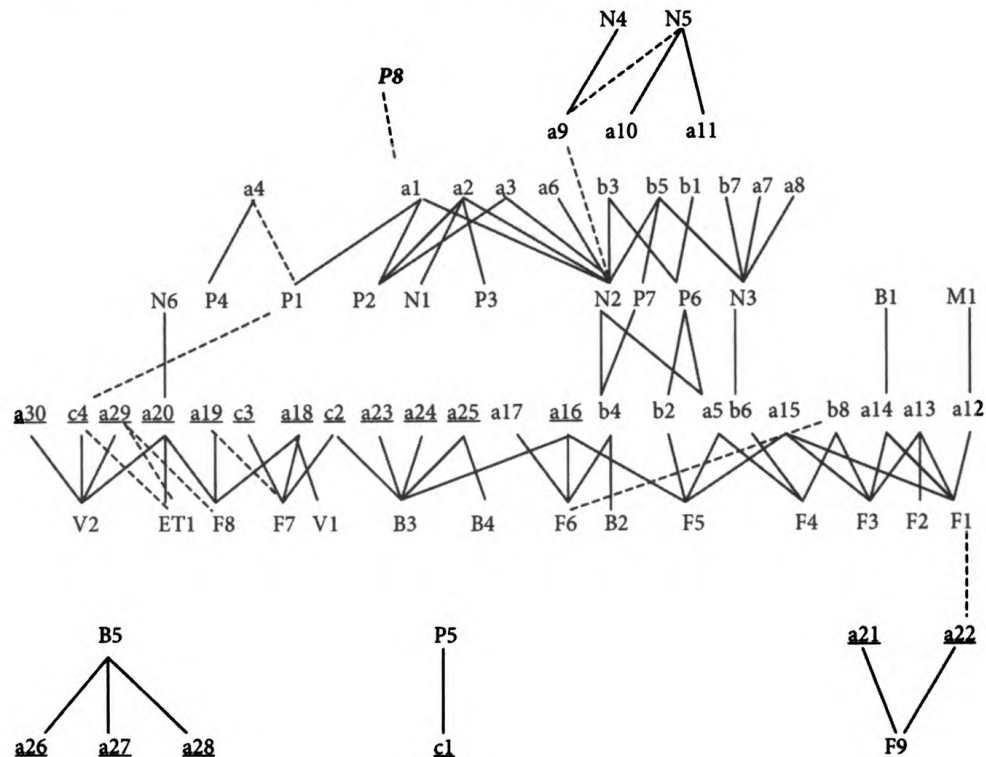
H1 NAC 80	S1 Cambridge 1936	S10 Künker 97, 1384	S20 Helbing 595
	S2 Hunter 201	S11 CNRev 230	S21 Hess 505
	S3 Vienna 8155	S12 Gemini	S22 Glendining 1291
	S4 Vienna 33586	S13 Paris Rothschild 239	S23 Gorny 1994 lot 67
	S5 Ars Classica XVII	S14 Paris Rothschild 241	
	S6 Ars Classica XVII	S15 BMC 622	
	S7 Nordheim	S16 BRB Lib. 224	
	S8 O'Hagan 273	S17 Arquennes Hoard 398	
	S9 Baldwin 39, 1438	S18 Basel 1662	
		S19 Platt 68	

GROUPS 1-3, REVISED DIE LINK CHARTS

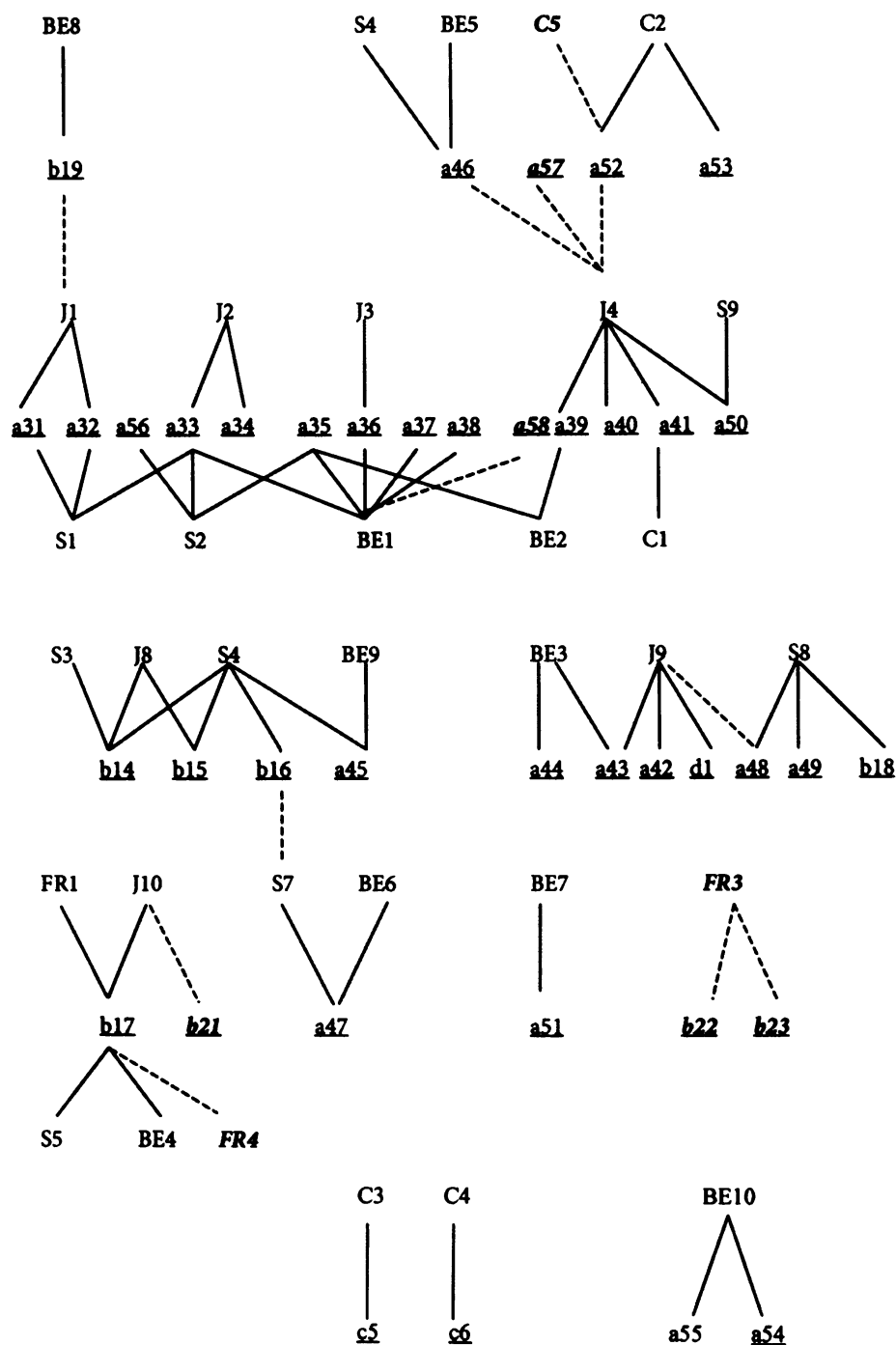
These charts fall into three series (groups 1-3), which are each composed of die-linked types. No die links whatsoever have been found between these three main groups. To both groups 1 and 2 have been added individual die pairs or small linked series that do not link to the main series but are of the same obverse and reverse types. Group 3 is defined primarily by the types Rex Parthus and Profectio, which it contains. The former is die linked to the earliest OPTIMUS coinage, in group C following, showing that it is later in date than group 2. New links (found since 2000) are shown as dotted lines; new dies are shown in **bold italics**.

Group 1

Basilica Ulpia (B) + Forum of Trajan (F) + Via Appia (V) + Mars Victor (M) + Trajan Senior (P) + Deified Nerva and Trajan Senior (N)

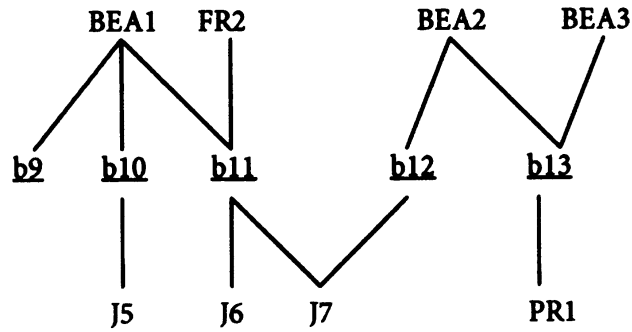


Jupiter Conservator (J) + Standards (S) + Bonus Eventus (BE) + Column of Trajan (C) + Fortuna Redux (FR)



Group 3

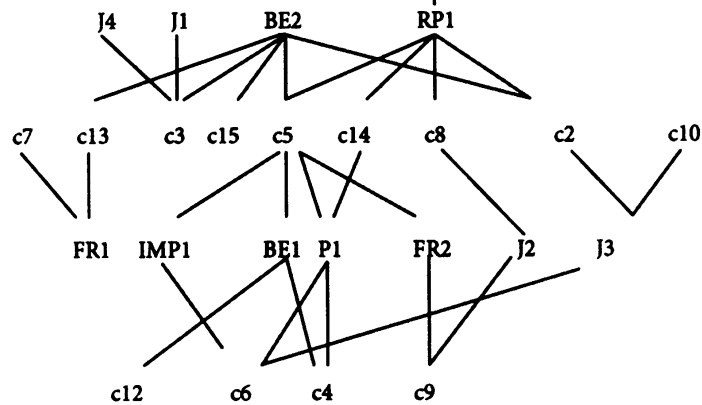
Bonus Eventus with Altar (BEA) + Jupiter Conservator (J) + Fortuna Redux (FR)
+ Profectio (PR) + Rex Parthus (RP)



b20
RP1

links to Group C (OPTIMUS) obverses

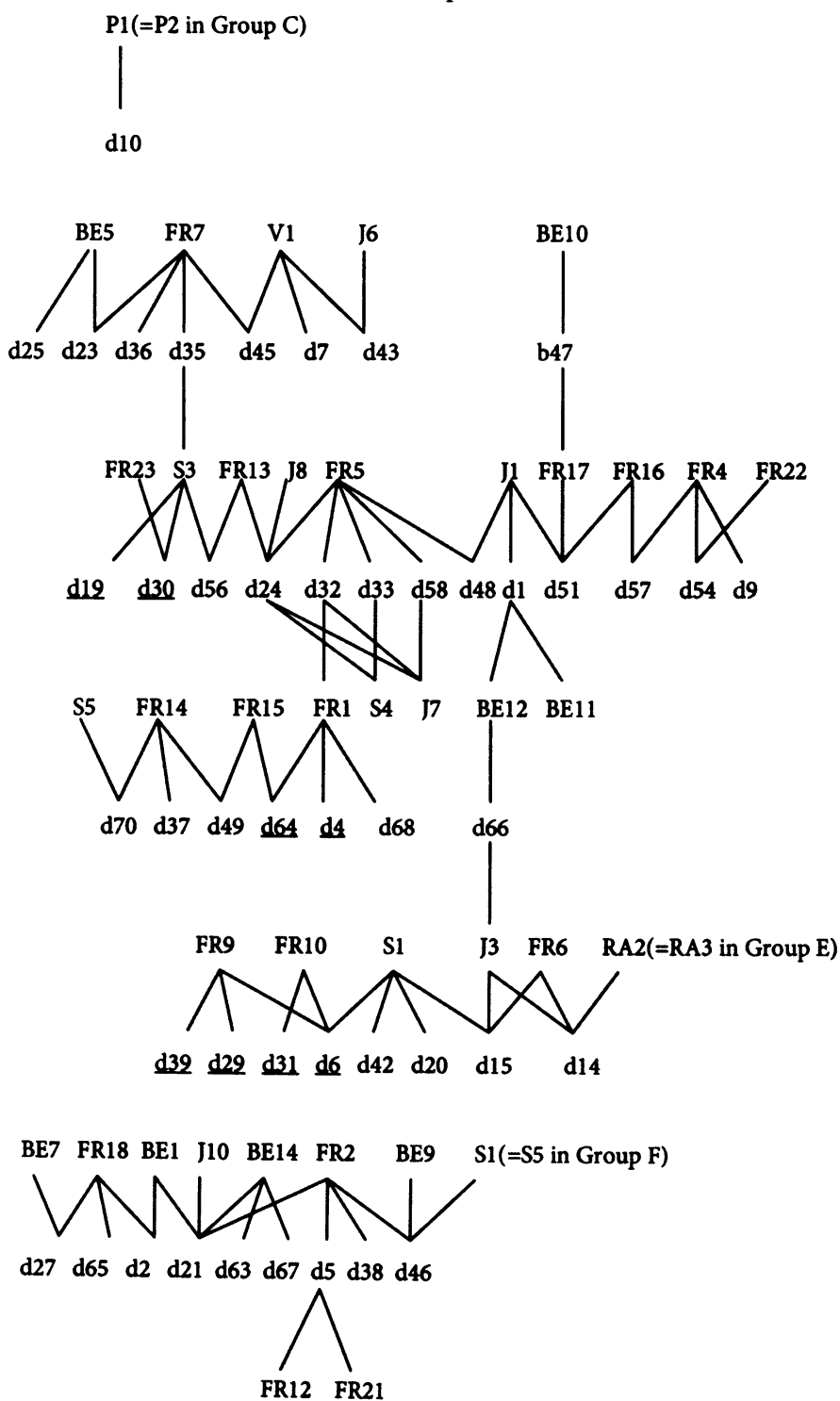
Group C
Linked to pre-Optimus coinage



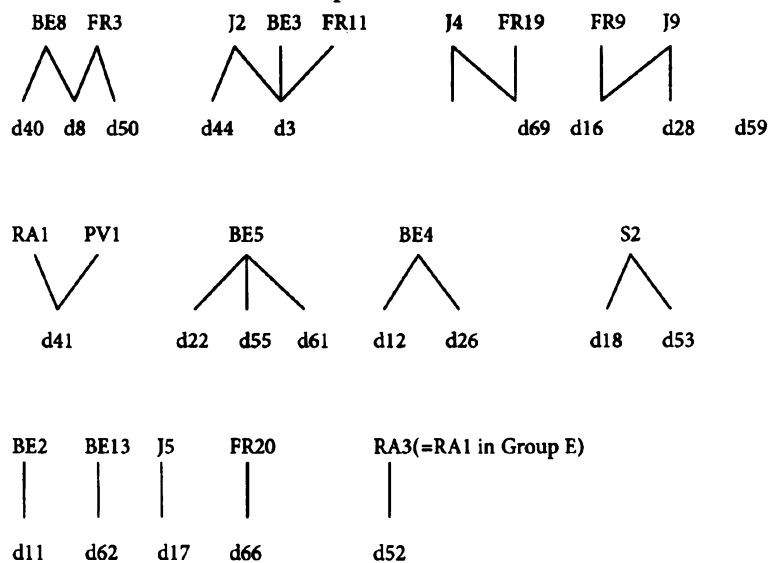
c11 c1
BE3 P2

Linked to Group D

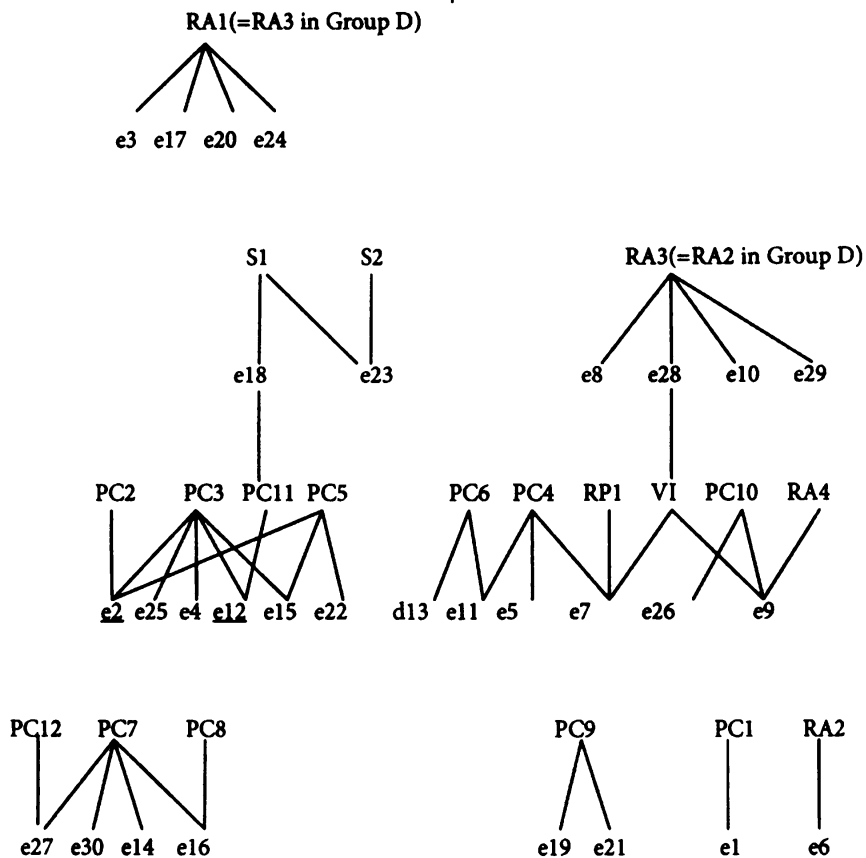
Group D



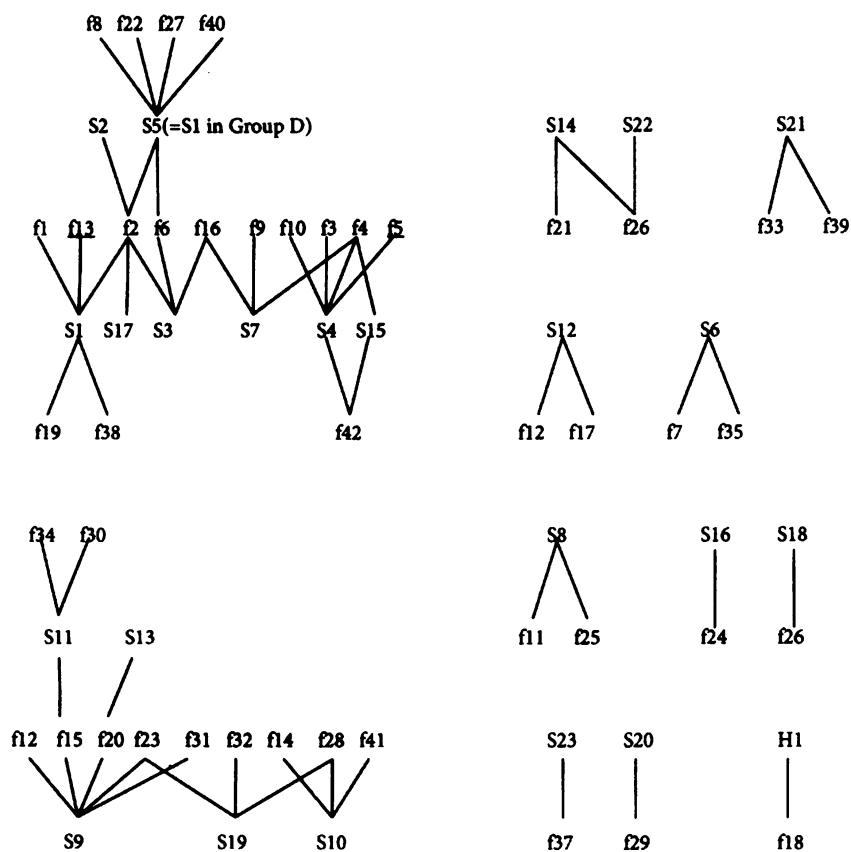
Group D continued



Group E



Group F



The Enigma of ‘Aḍud al-Dawla Kuch Tegīn Resolved

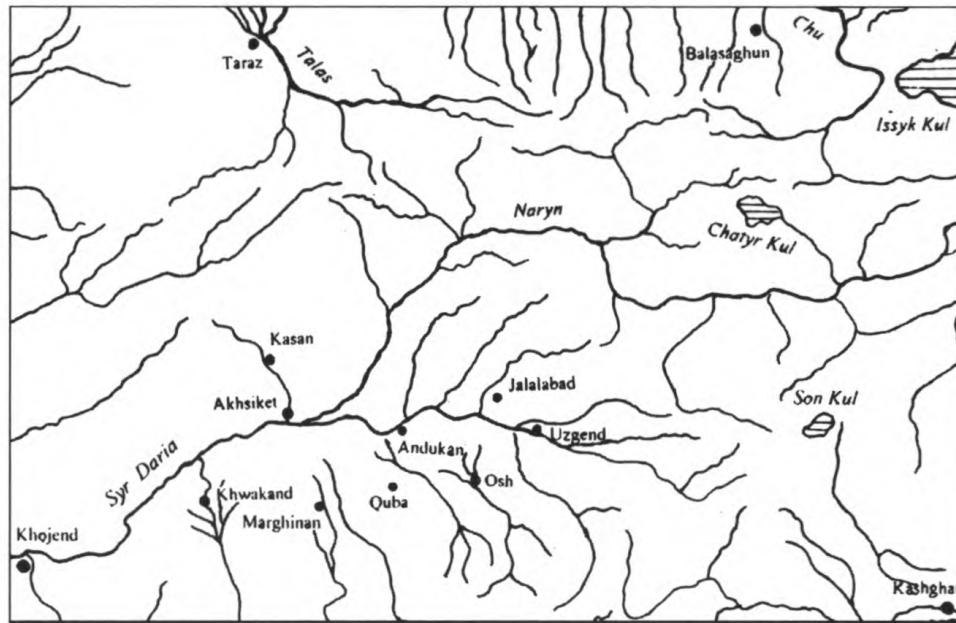
MICHAEL FEDOROV*

This study of Qarākhānid coins establishes that the appanage ruler ‘Aḍud al-Dawla Kuch Tegīn was the brother of the supreme ruler of the Eastern Qarākhānids, Qadir Khān Yūsuf ‘Alī b. Harun. From 416/1025–26 to 444/1053–54, he ruled Akhsiket, Fargānā, Kāsān, Khojende, Marghīnān, Qūbā, Quz Ordū, Rishtān, and Uzgend.

The chronicles written by the Qarākhānid khaqanate have not survived. Information on the Qarākhānids in the contemporary chronicles of the Gaznavids, Saljūqids, Khwārizmshāhs, or in the chronicles which were written after the Qarākhānids ceased to exist (Ibn al-Athīr and later) is scarce, obscure, and sometimes contradictory. That is why Qarākhānid coins are very important and sometimes the only source for some periods in the history of the Qarākhānid khaqanate. Unfortunately, Qarākhānid coinage is very complicated. The rulers had many *laqabs* (honorary epithets) and changed their titles during their career. We often find on the coins only a *laqab* or title without a corresponding name. The coins usually mention two or three different people, who may be suzerain, vassal, or subvassal. This means that many rulers are hidden behind anonymous *laqabs* or titles. The most important (and most difficult) task of a scholar of Qarākhānid numismatics and history is to identify an anonymous *laqab* or title with some Qarākhānid cited on other coins by name or mentioned in the chronicles.

In AH 416/1025–26, Qarākhānid coins were minted by an appanage ruler ‘Aḍud al-Dawla Kuch Tegīn. As is often the case, no name accompanied the *laqab*

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Map 1. Qarākhānid towns of Farghāna and adjacent lands

‘Aḍud al-Dawla (Arm of the State) and the title Kuch Tegīn (Strong Prince). The name of this ruler and his place in the Qarākhānid family posed one of the many enigmas of Qarākhānid numismatics and history. The first attempt to identify ‘Aḍud al-Dawla Kuch Tegīn with a known Qarākhānid was made in 1956 by B. A. Litvinskii (1956, 116–117). Citing coins of AH 424–425 struck in Uzgend with the *laqab* Mu‘ayyid al-‘Adl and the title Kuch Tegīn, he wrote: “According to Baihaqī in AH 429 (1037–38) Uzgend was ruled by ‘Ain al-Dawla. One may suppose that he ruled this town earlier and that coins of 424–425 were minted by him.” Further on, he wrote that *laqab* Mu‘ayyid al-‘Adl belonged to father of ‘Ain al-Dawla, Naṣr b. ‘Alī (conqueror of Bukhārā in 999) and that the Varukh Gorge inscription (in Fergana) dated to AH 433 cited “Mu‘izz al-Dawla Arslān Tegīn Abū al-Faḍl ‘Abbās Ibn Mu‘ayyid al-‘Adl Ilek Ibn amīr Naṣr Ibn ‘Alī Khān.” One son of Naṣr b. ‘Alī, Ibrahīm, is known to place on his coins the *laqab* Mu‘ayyid al-‘Adl, but in 433/1041 he was Khān and could not be cited as Ilek, since the title Ilek is second to that of Khān. It means that *Mu‘ayyid al-‘Adl Ilek* (father of Mu‘izz al-Dawla, by whose order the Varukh inscription was made) was the same person as ‘Ain al-Dawla. For this reason, Litvinskii attributed the title Kuch Tegīn to ‘Ain al-Dawla. This identification was accepted by E. A. Davidovich (1968, 70) and myself (Fedorov 1980, 47). V. N. Nastich and B. D. Kochnev (1988, 74) also agreed that the *laqab* ‘Aḍud al-Dawla belonged to Muḥammad b. Naṣr (i.e. ‘Ain al-Dawla).

On close examination, however, the arguments of Litvinskii prove not to be valid:

(1) Litvinskii's belief that, according to Baihaqī, 'Ain al-Dawla ruled Uzgend in 429 was a misunderstanding. In the "Chronicle of the year 429," Baihaqī (1969, 669) wrote that the sultan Mas'ud of Ghazna received a letter from Uzgend, written by the Qarākhānid Bū Ishāq (i.e., Būrī Tegīn) offering Mas'ud his service. In the "Chronicle of the year 430," Baihaqī (1969, 682) wrote, "since there happened to be no place for him with his brother 'Ain ad-Dawla," Būrī Tegīn "came to our lands." These words of Baihaqī were construed in the sense that 'Ain ad-Dawla ruled Uzgend in 429. New numismatic data do not corroborate this. In AH 429 in Uzgend, Qadir Khān II Suleimān, brother of the late Qadir Khān I Yūsuf, minted coins. As for 'Ain al-Dawla, in 429/1037–38 he minted coins in Marghīnān (Fedorov 2003, 370). It is not out of the question, though, that Būrī Tegīn indeed first came to his brother, 'Ain ad-Dawla, but then was forced to leave him and go to Uzgend, whence he wrote his letter to Mas'ud Ghaznavī.

(2) 'Ain ad-Dawla had the *laqab* Mu'ayyid al-'Adl, but this does not necessarily mean that he had the title Kuch Tegīn. On some Qarākhānid coins were mentioned two or even three persons: suzerain, vassal, and subvassal. Thus Kuch Tegīn could be vassal and 'Ain ad-Dawla suzerain or vice versa. In my recent comprehensive article on the genealogy of the Qarākhānids (Fedorov 2001, 16–33), the enigma of 'Aḍud al-Dawla Kuch Tegīn remained unresolved. There I wrote: "Litvinskii (1956, 116) identified Kuch Tegīn 'Aḍud al-Dawla as Muḥammad b. Naṣr. Davidovich (1968, 70) and I (Fedorov 1980, 49) shared his opinion (Fedorov 2001, 23). But now I am prone to believe that 'Aḍud al-Dawla Kuch Tegīn was another Qarākhānid."

However, the enigma of 'Aḍud al-Dawla Kuch Tegīn can be resolved. Ibn al-Athīr wrote about the events of AH 435 in the Qarākhānid khaqanate: "Sharaf al-Dawla (i.e., Arslān Khān Suleimān son of Qadir Khān I Yūsuf) owned Balāsāghūn and the Land of Turks (i.e., Eastern Turkestan). He was pious, contented himself with obedience of his brothers and relatives and shared the country between them. He gave his brother Arslān Tegīn much of the Land of Turks. Ṭarāz and Ispijāb he gave to his brother Boghrā Khān. To his uncle Ṭoghā (on coins more frequently spelled Ṭonghā) Khān he gave all Farghāna. He contented himself with Balāsāghūn and Kāshghar" (Materialy 1973, 60). (In fact, Arslān Khān did not grant anybody anything [at least not to Boghrā Khān and Ṭoghā Khān]. He had to sanction disintegration of his father's vast state into three khanates: Boghrā Khān's [Ṭarāz-Ispijāb-Shāsh-Īlāq], Ṭoghā/Ṭonghā Khān's [Farghāna], and his own [Balāsāghūn-Kāshghar-Yarkend]).

This narration of Ibn al-Athīr is important, since it helps to establish that Ṭoghā/Ṭonghā Khān was the brother of Qadir Khān I Yūsuf. The personal name of this Ṭoghā/Ṭonghā Khān, however, was still not known. However, in 2003 I came across the coins of AH 42x (not earlier than 425) Quz Ordū citing

Malik al-Mu'ayyad 'Alī. Coins of AH 430–433 Uzgend cited Malik al-Mu'ayyad Ṭonghā Khān (Kochnev 1995, 259 no. 830). Thus we had two premises: (a) Malik al-Mu'ayyad = 'Alī, and (b) Malik al-Mu'ayyad = Ṭonghā Khān. The conclusion quickly followed: Ṭonghā Khān = 'Alī. My deduction was further proved when a coin of AH 427 Quz Ordū citing Malik al-Mu'ayyad Ṭonghā Khāqān 'Alī was found (Kochnev 2004, 275 no. 8176).

Having demonstrated that the name of Ṭonghā Khān was 'Alī, I (Fedorov 2005, 362) came to a provisional conclusion: "It is not clear whether he held any appanage under his brother Qadir Khān I Yūsuf but if he did, and minted coins, then it was with another title and *laqab*." In order to determine this title and *laqab*, I reexamined all the known coins from that period. When I came across a coin of AH 419 Akhsiket (Kochnev 1995, 251 no. 697) citing 'Aḍud / 'Alī / Malik al-Mashriq / al-Dawla (the words 'Aḍud, 'Alī, and al-Dawla written in small letters show that the person mentioned was a vassal), the answer was clear.

This coin was minted in Akhsiket by 'Aḍud al-Dawla 'Alī (future Ṭonghā Khān 'Alī), citing (in large letters, in the center of the coin) his brother and suzerain Malik al-Mashriq (i.e., Qadir Khān I Yūsuf b. Hārūn). I was familiar with the coin, but having been influenced by the identification offered by Litvinskii, I assumed that the *laqab* 'Aḍud al-Dawla belonged to Muḥammad b. Naṣr and the name 'Alī to Muḥammad's vassal. Later, I began to harbor doubts. In my article on the history of Akhsiket and Kāsān, based on the data provided by Qarākhānid coins, I wrote: "In AH 419 'Aḍud al-Dawla (Kochnev 1995, 251 nos. 696–697) minted in Akhsiket as vassal of Qadir Khān. A *fals* of 251/696 cites Badr al-Dawla after 'Aḍud al-Dawla. Since both *laqabs* are in the obverse circular legend they belong to the same person. Another *fals* of 251/697 cites 'Alī under the word 'Aḍud. Could this name refer to 'Aḍud al-Dawla?" (Fedorov 2000, 6). At that point, I was unable to answer that question, because I did not yet know that the personal name of Ṭonghā Khān, brother of Qadir Khān I, was 'Alī. However, now having solved that mystery, we can trace 'Aḍud al-Dawla's career by his coins (see Table 1).

Uzgend. In 416/1025–26, the head of Eastern Qarākhānids, Qadir Khān I Yūsuf b. Hārūn (with his capital in Kāshghar), attacked the Western Qarākhānids, conquering Balāsāghūn and Eastern Farghāna. He gave Uzgend as an appanage to his brother Kuch Tegīn 'Alī. In 416, coins of Uzgend (Kochnev 1995, 249 no. 663) cite Qadir Khān (suzerain), Kuch Tegīn (vassal), and Saif al-Dawla (subvassal). Saif al-Dawla was the second *laqab* of 'Ain al-Dawla Muḥammad b. Naṣr (Kochnev and Nastich 1988, 73–74), who in 414 and most probably in 415 possessed Uzgend (Kochnev 1995, 246 no. 610). But in the same year 416, the coins of Uzgend cite Qadir Khān and 'Aḍud al-Dawla Kuch Tegīn only; that is, Saif al-Dawla disappeared from the coins (Kochnev 1995, 249 no. 664). Then Qadir Khān granted Uzgend to his brother Suleimān. Some coins of AH 416(?) Uzgend

Table 1. Coins of 'Aḍud al-Dawla Kuchtegīn 'Alī b. Hārūn
(future Ṭonghā/Ṭoghā Khān)

Year		Suzerain	Vassal	Subvassal
Town		Uzgend	Uzgend	Uzgend
416	D	E. Malik al-Mashriq Qadir Khān (I Yūsuf)	E. Kuchtegīn	W. Saif al-Dawla
416?	F	E. Qadir Khān	E. 'Aḍud al-Dawla Kuchtegīn	
418	D	E. Malik al-Mashriq Qadir Khān Iusuv	E. Kuchtegīn	
419	F	E. Malik al-Mashriq Qadir Khān	E. 'Aḍud al-Dawla	
420-423	D	E. Nāṣir al-Ḥaqq Malik al-Mashriq Qadir Khān	E. 'Aḍud al-Dawla Kuchtegīn	
423	F	E. Khān Yūsuf b. Hārūn	E. 'Aḍud al-Dawla Kuchtegīn	
424, 425	D	E. Mu'ayyid al-'Adl Kuchtegīn	W?E? Hāshim	
428, 430-433	D	E. Malik al-Mu'ayyad Ṭonghā Khān		
440	D	E. Arslān Qarāhāqān (Sulaimān b. Yūsuf)	'Aḍud al-Dawla	
440, 441	D	E. Arslān Qarāhāqān (Sulaimān b. Yūsuf)	'Aḍud al-Dawla	W?E? Bahrām
Town		Akhsiket	Akhsiket	Akhsiket
4(1)9	D	E. Qadir Khān (I Yūsuf)	E. 'Aḍud al-Dawla Kuchtegīn	
4(1)9	D	E. Qadir Khān (I Yūsuf)	E. 'Aḍud al-Dawla Tegīn	
419	F	E. Qadir Khān (I Yūsuf)	E. 'Aḍud al-Dawla	
419	F	E. Khān Malik al-Mashriq (Yūsuf)	E. 'Aḍud al-Dawla 'Alī	
422	D	E. Nāṣir al-Ḥaqq Malik al-Mashriq Qadir Khān	E. 'Aḍud al-Dawla Kuchtegīn	W?E? Aḥmad
423	D	E. Nāṣir al-Ḥaqq Malik al-Mashriq Qadir Khān	E. 'Aḍud al-Dawla Kuchtegīn	Aḥmad Alptegin
424	F	E. 'Aḍud al-Dawla	W. Mu'izz al-Dawla Malik	
429-430	D	E. Malik al-Mu'ayyad Ṭonghā Khān		

Town		Kāsān	Kāsān	Kāsān
422-423	D	E. Malik al-Mashriq (Qadir Khān I Yūsuf)	E. 'Aḍud al- Dawla	W. Mu'izz al- Dawla Malik
4xx	F	E. 'Aḍud al-Dawla	W. Mu'izz al- Dawla Malik	
Town		Qubā	Qubā	Qubā
416?	F	E. Nāṣir al-Dawla Malik al-Mashriq Qadir Khān	Kuchtegin	
417	F	E. Qadir Khān	E. 'Aḍud al- Dawla	
442	D	E. Arslān Qarāhāqān (Sulaimān b. Yūsuf)	'Aḍud al-Dawla	Būrītegin
445		E. Arslān Qarāhāqān (Sulaimān b. Yūsuf)	E. 'Imād al- Dawla	'Aḍud al-Dawla
Town		Marghinān	Marghinān	Marghinān
418	D	E. Malik al-Mashriq Qadir Khān (I Yūsuf)	E. Kuchtegin	
423	D	E. Nāṣir al-Ḥaqq Malik al-Mashriq Qadir Khān	E. 'Aḍud al- Dawla Kuchtegin	
439-440	D	E. Malik al-Mu'ayyad Ṭonghā Khān		
442	D	E. Arslān Qarāhāqān (Sulaimān b. Yūsuf)	'Aḍud al-Dawla	Būrītegin
Town		Khojende	Khojende	Khojende
423-424	D	E. Nāṣir al-Ḥaqq Malik al-Mashriq Qadir Khān	E. Rukn al- Dawla	E. 'Aḍud al- Dawla
Town		Rishtān	Rishtān	Rishtān
423	D	E. Nāṣir al-Ḥaqq Malik al-Mashriq Qadir Khān	E. Rukn al- Dawla	E. 'Aḍud al- Dawla
Town		Farghāna	Farghāna	Farghāna
431	F	... (Mu)'ayyad Ṭo(n)ghā Khān		
Town		Quz Ordū (Balāsāghūn)	Quz Ordū	Quz Ordū
42(5?)	D	E. Malik al-Mu'ayyad 'Alī		
427		E. Malik al-Mu'ayyad Ṭonghā Khāqān 'Alī		
429	D	E. Khāqān al-Mu'ayyad Malik al-Mashriq va al-Ṣīn		

D = Dirham. F = fals. W = Western Qarākhānid. E = Eastern Qarākhānid. The name *Iusuv-* is written in Uighur letters.



Figure 1. Dirham of AH 422 Uzgend citing Aḍud al Dawla Kuch Tegīn and Qadir Khān

(Kochnev 1995, 249 no. 664) cite Qadir Khān and Suleimān b. Shihāb al-Dawla. The *laqab* Shihab al-Dawla belongs to their father, Boghrā Khān Hārūn (Biruni 1957, 150). In 418 and part of 419, Uzgend coins cite 'Aḍud al-Dawla Kuch Tegīn and Qadir Khān again (Kochnev 1995, 251 no. 693, collection of K. Danilenko, Kizil-Kiia). Other coins of 419 Uzgend cite Suleimān and Qadir Khān (Kochnev 1995, 251 no. 705). In 420–422, the coins of Uzgend cite 'Aḍud al-Dawla Kuch Tegīn and Qadir Khān in one part of the year, and in another part of the year they cite Suleimān and Qadir Khān (Kochnev 1995, 252 no. 715; collection of V. Kosmachev, Frunze; Osh Museum 5219, ΦH 155/4) (Fig. 1). Probably this policy of Qadir Khān was directed against the attempt to turn Uzgend into a hereditary appanage. There may have been some sort of rotation: for perhaps half a year Uzgend was ruled by Kuch Tegīn, then he was transferred to another town (for instance Marghinān), and during the second half of the year Uzgend was ruled by Suleimān. In 423, however, the coins of Uzgend (Kochnev 1995, 252 no. 715) cite Aḍud al-Dawla Kuch Tegīn and Qadir Khān only—or perhaps coins of AH 423 Uzgend citing Qadir Khān and Suleimān have not been found so far.

Akhsiket. Some years ago, Kochnev (1995, 249 nos. 662, 671) published two coins of Akhsiket on which he read the date as 417. No. 662 cites Qadir Khān and Suleimān b. Shihāb al-Dawla, while No. 671 cites 'Aḍud al-Dawla Kuch Tegīn and Qadir Khān. The date 417, however, is impossible, because in 417, 418, and 419 in Akhsiket the Western Qarākhānid Mu'izz al-Dawla minted coins (Kochnev 1995, 250 nos. 673, 686–687; Fedorov 2005, 350). Arab digitals (7) سبع and (9) تسع differ only by diacritical marks (almost always absent on the coins), making it easy to mistake تسع for سبع. Most likely, Kochnev misread the date. The coins on which he read the date as 417 must have been minted in 419/1028. On two other coins, Kochnev (1995, 251 nos. 696–697) read the date as (41)9. No. 696 cites Qadir Khān and 'Aḍud al-Dawla Badr al-Dawla; more importantly, no. 697 cites Malik al-Mashriq Khān (i.e., Qadir Khān I) and 'Aḍud al-Dawla'Alī. In 420, Qadir Khān I Yusuf returned Akhsiket to Mu'izz al-Dawla, where the latter minted coins as a vassal of Qadir Khān (Kochnev 1995, 252 no. 709). In 422, Akhsiket again minted coins citing, part of the year, Qadir Khān and Kuch Tegīn and, another

part of the year, Qadir Khān and Suleimān b. Shihāb al-Dawla (Kochnev 1995, 253 nos. 732–733). In 422–423, coins of Akhsiket cite three persons: Qadir Khān (suzerain), ‘Aḍud al-Dawla Kuch Tegīn (vassal), and Alp Tegīn Aḥmad (subvassal).

Marghinān. Coins of AH 418 Marghinān cite Kuch Tegīn and Qadir Khān I (Kochnev 1995, 250 no. 689). Coins of AH 423 Marghinān cite ‘Aḍud al-Dawla Kuch Tegīn and Qadir Khān I (Kochnev 1995, 252 no. 715).

Kāsān. In 421, the coins (Kochnev 1995, 252 no. 722) cite Malik al-Mashriq (suzerain, Qadir Khān I) and Mu‘izz al-Dawla Malik (vassal). In 422–423, the coins (Kochnev 1995, 252 no. 735) cite Malik al-Mashriq (suzerain), Mu‘izz al-Dawla Malik (vassal), and ‘Aḍud al-Dawla (subvassal). Accordingly, Mu‘izz al-Dawla owned Kāsān as vassal of Qadir Khān I but ‘Aḍud al-Dawla was granted some feudal rights there: the right to be cited on coins of Kāsān and—more important—to receive some part of taxes collected from Kāsān.

Qubā. Coins of 416(?) Qubā cite Qadir Khān I and Kuch Tegīn (Kochnev 1995, 249 no. 670); coins of 417 cite Qadir Khān I and ‘Aḍud al-Dawla (Kochnev 2004, 274 no. 677a). Interestingly enough, in the same year 417 some coins of Qubā cited Qadir Khān I and Suleimān b. Shihāb al-Dawla (Kochnev 2004, 274 no. 677b).

Khojende. In 423–424, the coins of Khojende (Kochnev 1995, 254 no. 747; Mayer 1998, 56 no. 456) cite Qadir Khān I (suzerain), Rukn al-Dawla (vassal), and ‘Aḍud al-Dawla (subvassal). Thus Rukn al-Dawla possessed Khojende as a vassal of Qadir Khān I but ‘Aḍud al-Dawla was granted some feudal rights there: the right to be cited on coins of Khojende and receipt of some portion of the taxes collected from Khojende.

Rishtān. In 423, the coins of Rishtān (Kochnev 1995, 254 no. 747) cited Qadir Khān I (suzerain), Rukn al-Dawla (vassal), and ‘Aḍud al-Dawla (subvassal). The situation was the same as with Khojende in 423–424, above. According to Jamāl Qarshī (Bartold 1963, 43), Qādir Khān I Yusuf died in the beginning of Muḥarram (the first month) of AH 424 (according to Ibn al-Athir, in AH 423). The situation in Farghāna changed.

Uzgend. In 424–425, coins of Uzgend cited Mu‘ayyid al-‘Adl, Kuch Tegīn, and Hāshim (Kochnev 1995, 256 no. 773). The *laqab* Mu‘ayyid al-‘Adl is placed on the reverse after the honorary mention of the Caliph, that is, at the place where the suzerain should be mentioned. If this *laqab* on the coins of AH 424–425 Uzgend belonged to ‘Ain al-Dawla Muḥammad, it would mean that he was suzerain of Kuch Tegīn. This is hardly probable. Farghāna was captured from the Western Qarākhānids by Qadir Khān I and stayed under the sway of the Eastern Qarākhānids until the beginning of the AH 450s. Representative of the Eastern Qarākhānids’ older generation, Kuch Tegīn ‘Alī, brother of Qadir Khān I and uncle of the new supreme ruler, Arslān Khān Suleimān (son of Qadir Khān I), simply

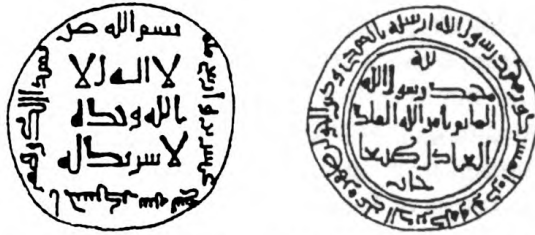


Figure 2. Dirham of AH 429 Akhsiket citing Ṭonghā Khān

could not be a vassal of some Western Qarākhānid. Therefore I believe the *laqab* Mu'ayid al-'Adl belonged to Kuch Tegīn and that Hāshim was Kuch Tegīn's vassal.

In the same year 425, Uzgend changed hands. In 425–430 in Uzgend, minted coins cite Qadir Khān II Suleimān, brother of Qadir Khān I (Kochnev 1995, 257 nos. 794–796; 258 no. 807; 259 nos. 820, 830; 260 no. 840). Sometimes (in AH 427–428), Suleimān's vassal Hāshim is also cited.

In 430, Uzgend became the capital of Ṭonghā (Eastern) Khān I 'Alī, former 'Aḍud al-Dawla Kuch Tegīn. In 430–433, Uzgend coins cite Malik al-Mu'ayyad Ṭonghā Khān. No vassal is cited. There is a coin of AH 428 Uzgend citing Malik al-Mu'ayyad Ṭonghā Khān (Kochnev 1995, 259 no. 830), but it is a mule minted by an obsolete obverse die of AH 428. Ibn al-Athīr wrote that in 435 Sharaf al-Dawla (Arslān Khān Suleimān) gave his uncle Ṭoghā (Ṭonghā) Khān all of Farghāna. As a matter of fact, as mentioned above, Arslān Khān had to sanction disintegration of his father's vast state into three khanates: Boghrā Khān's (Ṭarāz-Ispījāb-Shāsh-Īlāq), Ṭoghā/Ṭonghā Khān's (Farghāna), and his own (Balāsāghūn-Kāshghar-Yarkend). Ṭonghā Khān I ruled Farghāna until 440/1048–49, when Arslān Khān invaded and conquered Farghāna. In 440 (Kochnev 1997, 278 no. 1199), Uzgend coins cite Arslān Khān (suzerain) and 'Aḍud al-Dawla (vassal). In 440–441 (Kochnev 1997, 278 no. 1198), Uzgend coins cite Arslān Khān (suzerain), 'Aḍud al-Dawla (vassal), and Bahrām (subvassal). In 2004, I (Fedorov 2004, 12) believed that 'Aḍud al-Dawla Bahrām was vassal of Arslān Khān, but now I realize it was not so. Having conquered Farghāna, Arslān Khān left it to his uncle Uzgend, where the latter had to recognize Arslān Khān as suzerain. But in that same year 440, Arslān Khān sent to Uzgend his representative Bahrām (subvassal). In 442, 444, and 445 (Kochnev 1997, 278 no. 1199), coins of Uzgend cited Arslān Khān (suzerain) and *Fakhr al-Dawla* (not 'Aḍud al-Dawla) *Bahrām* (vassal).

Akhsiket. In 424 (Kochnev 1995, 255 no. 762), coins of Akhsiket cite 'Aḍud al-Dawla (suzerain) and Mu'izz al-Dawla (vassal). In 429–430 (Kochnev 1995, 260 nos. 832, 844), coins of Akhsiket cite Malik al-'Adil Ṭonghā Khān without citing any vassal (Fig. 2). But in the same years 430 and 431–434 (Kochnev 1995, 261 nos. 844, 851; Kochnev 1997, 277 nos. 1180–1181; collection of S. Khramov, Bishkek), coins of Akhsiket cite Mu'izz al-Dawla without citing any suzerain.

After 434/1042–43, Mu'izz al-Dawla disappeared from the Akhsiket coins. In 435/1043–44, according to Ibn al-Athir, Ṭonghā (Eastern) Khān I 'Alī became the “ruler of all Farghāna.” But in reality, it was not “all Farghāna.”

Having sanctioned in 435 the disintegration of his father's state, Arslān Khān did not reconcile himself to it. In 440, he invaded and conquered almost all of Farghāna. After 440, towns of Farghāna minted coins citing him as suzerain or direct owner. Only in the northern part of Farghāna, adjacent to the state of Boghrā Khān Muḥammad, do coins of Akhsiket cite in the years 440–449 a certain Jalāl al-Dawla Ṭonghā Tegīn and his suzerain Boghrā Khān (Kochnev 1997, 278 no. 1196). O. Pritsak (1953, 39) argued that having lost Farghāna, Ṭonghā Khān retained Akhsiket, changed his title of khan to the humbler title of *tegīn* (prince), and recognized Boghrā Khān as suzerain, in order to seek protection against Arslān Khān. However, Ṭonghā Khān never had the *laqab* Jalāl al-Dawla. And as shown above, Ṭonghā Khān retained Uzgend as a vassal of Arslān Khān. But he had to share Uzgend with subvassal Bahrām, sent there by Arslān Khān. Could it be that when Arslān Khān invaded and captured southern Farghāna Boghrā Khān invaded and captured northern Farghāna? Seemingly Arslān Khān was not then strong enough to fight Boghrā Khān. He attacked Boghrā Khān later, circa 447, but was routed and put in prison. Fifteen months later, one of the Boghrā Khān's wives poisoned him, ordered the imprisoned Arslān Khān strangled, and put on the throne her juvenile son Ibrahīm (Fedorov 2004, 12).

Qubā. In 442 (Kochnev 1997, 278 no. 1204), coins of Qubā cite Arslān Qarākhāqān (suzerain), Būri Tegīn (vassal), and 'Aḍud al-Dawla (subvassal). Accordingly, apart from possessing Uzgend as a vassal of Arslān Khān and suzerain of Bahrām, 'Aḍud al-Dawla had feudal rights in Qubā, where he was cited on the coins and received a portion of the taxes collected there. In 445 (Kochnev 1997, 278 no. 1228), coins of Qubā cite Arslān Qarākhāqān (suzerain), 'Imād ad-Dawla (vassal), and 'Aḍud al-Dawla (subvassal). Thus the situation was the same, but instead of Būri Tegīn, there was the vassal 'Imād al-Dawla (I believe that 'Imād al-Dawla was the *laqab* of Būri Tegīn). On one of these coins, Kochnev read the date “447?” but he must be mistaken. In 445–447, coins of Qubā cite Arslān Khān (suzerain), Muḥammad b. Naṣr (vassal), and Shihāb al-Dawla (subvassal). By the way, in 461 coins of Marghīnān (Kochnev 1997, 278 no. 1328) cite 'Imād ad-Dawla Ṭoghrul Qarākhāqān. Therefore it seems that the Qarākhānid appanage ruler 'Imād ad-Dawla appeared for the first time on the coins of AH 445 (1053–54) Qubā, where he was a vassal of Arslān Qarākhāqān Suleimān b. Yūsuf.

Marghīnān. In 441 (Kochnev 1997, 287 no. 1200), coins of Marghīnān cite Arslān Qarākhāqān as direct owner of the town without citing any vassal. Thus, having conquered Marghīnān, Arslān Khān possessed it himself for about a year before he passed it to his vassal and subvassal. In 442 (Kochnev 1997, 278 no.

1204), coins of Marghinān cite Arslān Qarākhāqān (suzerain), Būrī Tegīn (vassal), and 'Aḍud al-Dawla (subvassal). The situation in Marghinān was the same as it was in AH 442 in Qubā.

Farghāna. In 431, copper coins with the mint name Farghāna cite Ṭo(n)ghā Khān (Fedorov 2000a, 12). This mint worked in Uzgend, the Qarākhānid capital of the Farghāna valley (Fedorov 2000a, 10).

The latest coin citing 'Aḍud al-Dawla was minted in 445/1063 in Qubā. If 'Aḍud al-Dawla on the coins of AH 445 (1063) Qubā was 'Aḍud al-Dawla Kuch Tegīn (later Ṭonghā Khān) 'Alī b. Hārūn, which is the most probable possibility, he outlived his elder brother, Qadir Khān I Yūsuf b. Hārūn, by twenty-one years.

Still another point. The *laqab* 'Aḍud al-Dawla and title Kuch Tegīn usually were placed on coins in an ambiguous fashion: (1) the *laqab* and the title could both belong to the same person or (2) they could belong to two different persons. In 2001, a *fals* of AH (42)3 Uzgend was published (Fedorov 2001a, 83–84) that establishes that both the *laqab* and the title belonged to one and the same person. On the obverse of this *fals* the suzerain “Khān” is cited. In the reverse field was the legend “'Aḍud al-Dawla / Kuch Tegīn” written in two lines. The publication of this *fals* leads us to the following observations: On all the *dirhams* of AH 420–423 Uzgend (Kochnev 1995, 252 no. 715), the title Kuch Tegīn was placed on the reverse, that is, on the “more prestigious place” where caliph and suzerain are cited, while the *laqab* 'Aḍud ad-Dawla is on the obverse, where a vassal or subvassal is usually cited. Such placement of title and *laqab* can be interpreted in two ways: (1) they both belong to one and the same person, or (2) they belong to two different persons, and Kuch Tegīn, mentioned on the reverse, was higher in rank than 'Aḍud ad-Dawla. On the *fals* of AH 423 Uzgend, published by the writer (see above), both the title and *laqab* were placed on the same side of the coin (reverse field), and the *laqab* 'Aḍud ad-Dawla was placed above the title Kuch Tegīn. If there were two different persons cited, this would mean that 'Aḍud ad-Dawla was higher in rank than Kuch Tegīn. However, since on all the other coins of Uzgend the disposition of title and *laqab* implies the opposite, both the *laqab* and title must belong to one and the same person.

Thus do these Qarākhānid coins allow us to identify the appanage ruler 'Aḍud al-Dawla Kuch Tegīn 'Alī and trace his career. He belonged to the Eastern Qarākhānid line, being a son of Boghrā Khān Hārūn and junior brother of Qadir Khān I Yūsuf b. Hārūn. Boghrā Khān Hārūn ruled Balāsāghūn (at least from 380/990) and was the first Qarākhānid conqueror of the Sāmānid capital Bukhārā in 992. He died several weeks after the conquest, so that the Sāmānids managed to regain Bukhārā and retained it until Dhū-l-Qa'da 389/October 999, when Naṣr b. 'Alī (of the Western Qarākhānid line) conquered Bukhārā and put an end to the Sāmānid state. Qadir Khān I Yūsuf b. Hārūn was founder of

the Eastern Qarākhānid khaqanate. He ruled Kāshghar at least from 395/1004–5 until Muḥarram 424/December 1032 (Fedorov 2001, 17–18). In AH 416–424, ‘Aḍud al-Dawla Kuch Tegīn ‘Alī was vassal of Qadir Khān I and ruled appanage principalities (in Farghāna) granted to him by his senior brother, among which were (not simultaneously) Uzgend, Kāsān, Akhsiket, Qubā, Marghīnān, Khojende, and Rishtān (see Table 1). After the death of Qadir Khān I Yusuf, he ruled Quz Ordū (i.e. Balāsāghūn). The coin of AH 427 Quz Ordū citing Malik al-Muayyad Ṭonghā Khān ‘Alī attests to this. In or around AH 429 he moved to the Farghāna valley, where he created an independent khanate of his own, with a capital in Uzgend. In 440/1048–49, the supreme ruler of the Eastern Qarākhānid khaqanate, Arslān Khān Suleimān (son of Qadir Khān I Yusuf and nephew of Ṭonghā Khān ‘Alī) invaded Farghāna and subjugated it. The coins show that ‘Aḍud al-Dawla ‘Alī, being deprived of the title of khan, was left to rule Uzgend in AH 440–441 as a vassal of Arslān Khān Suleimān. ‘Aḍud al-Dawla, however, shared Uzgend with the subvassal Bahrām, sent there by Arslān Khān. As a vassal of Arslān Khān he also shared Qubā (in 442, 445, and 447?) and Marghīnān (in 442) with another vassal of Arslān Khān, ‘Imād al-Dawla Būrī Tegīn. The latest coin (with a certain date) citing ‘Aḍud al-Dawla was minted in 445/1053–54.

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On the Possibility That Athanagild's Name Appears in the Visigoths' Coinage: Evidence from a Late "Victory with Palm and Wreath" Coin and Tomasini's Corpus

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A Victory with Palm and Wreath (VPW) *tremissis* in the collections of the Portuguese Mint has a legend that suggests the name of Athanagild. Intrigued by the possibility that this Visigothic king's name may have appeared on coins during the civil war (550–554), his reign (554–567), or following his death (i.e., before coins having legends relating to Hermenegild and Leovigild), the author examines the VPW legends published by Wallace Tomasini (1964). It turns out that some of the legends in that corpus reveal letter frequencies and combinations that suggest the same thing. Historical scenarios are considered that address the circumstances and likelihood of coins produced declaring Athanagild's name.

The museum of the *Casa da Moeda, Lisboa* (Lisbon Mint) has in its collections a Victory with Palm and Wreath (VPW) *tremissis* (*Casa da Moeda* collection, coin 3877) that presents some unusual and interesting features. The coin was known to Wilhelm Reinhart and published by him in 1937 (Reinhart 1937, 189, no. 81, plate 36) and 1942 (Reinhart 1942, 328, no. 53, fig. 3), but aside from 1:1 photographs and brief descriptions in these catalogs, Reinhart offered no further comment or discussion on it.

The coin was not included in Wallace Tomasini's (1964) milestone examination and classification of this important imitative coin type. Tomasini included a

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few coins from collections in Lisbon, but for the coins in the *Casa da Moeda*, he relied upon those that Reinhart published as Visigothic (Reinhart 1940), while the *Casa da Moeda* coin had been published by Reinhart three years earlier as Suevic (see Tomasini 1964, xv). Tomasini thereby (evidently) overlooked this particular specimen while including a number of others that show many similarities. The *Casa da Moeda* coin has several features that make it unique. No doubt Tomasini would have included it in his corpus had he recognized it. In October 2002, the author found the file card for the coin in the records of the *Casa da Moeda*, under the category of Suevic coins, an identification that was apparently made many years ago—perhaps in 1937 by Reinhart himself—and that has probably contributed to the coin's obscurity until now.

Both obverse and reverse contain unusual device elements. The most extraordinary feature is the obverse legend, which in the author's reading is $\Lambda T I I N \Lambda I I$ $\text{✠} I I L \Delta \Lambda V C$ (see Figures 1a and 1b). Although blundered, this suggests *ATHAN-AG* $\text{✠} I L D A U G$, giving us the name of the Visigothic king who reigned from AD 554–567. If this is an attempt to indicate his name on a coin, it is quite startling, as this has never been reported.

THE COIN

Unfortunately, the museum's records give us nothing of the coin's provenance other than the probability that it is one of the many acquired from the holdings of the Portuguese king Dom Luís (r. 1861–1889). These coins were transferred to the public trust without documentation regarding their provenances, but it is assumed that they had been found within Portuguese territory—probably on royal land—and had thus come into the royal holdings. The coin's weight is 1.308 g, diameter c. 16.4 mm (ranging from 16.5 to 16.3), and the axis is 180°.



Figure 1a. The *Casa da Moeda* coin (3x)



Figure 1b. The *Casa da Moeda* coin (3x)

As is notorious among Visigothic coins, the coin's legends are difficult to read and some of the letters are particularly wretched (for instance, the T of "ATHINΛ . . ." has gone completely to pieces). The museum's file card indicates the following reading of the obverse and reverse legends:

obverse: ATHINΛITIV IV C

reverse: VITAR--ATHINΛ

exergue: COIIO

Reinhart (1937) gave:

obverse: ATHINΛITIV IV C

reverse: VIL.....

exergue: OIIO

In 1942, Reinhart described the legends as "indecipherable." It is curious that in 1937 he missed the initial (correct reading) and final (backward) C's in the exergue. These characters are very commonly present in these positions on similar coins and they are clearly present on the *Casa da Moeda* specimen.

My reading differs considerably from both of those above. I see several possibilities,¹ the most likely being:

1. Possible readings include, in addition to the one advanced in the text as preferred: ATHINΛITIV IV C yielding ATHINΛITIV IV C by inverting the I. If fleshed out, this reading might suggest ATHINΛITIV IV C, thus ATHINΛITIV IV C, thus ATHINΛITIV IV C. Other alternatives include: ATHINΛITIV IV C or ATHINΛITIV IV C. The bottom of the first Λ in the reverse legend includes two impressions of a small V-shaped punch (the top of the letter is unclear). The same punch seems to have been used on the final Λ, as well (most of this character is obscure), partially overlapping the bottom of the preceding letter. Elsewhere, the use of punches is not as easy to recognize and cannot be pointed to with certainty.

obverse: $\Lambda T I I N \Lambda I I \text{☞} I I \nabla \Lambda V$ Cyielding

$\Lambda T I I N \Lambda I I \text{☞} I I L \Delta \Lambda V$ Cby inverting the ∇ and ∇

reverse (beginning at 8 o'clock):

$V I T \Lambda I I I V \Lambda V I \Delta$ or: $V I T \Lambda I I I V \Lambda I I \Lambda$

(alternatively, beginning at 1 o'clock, for reasons developed below):

$I I I V \Lambda V I I \Lambda V I T \Lambda$ or: $I I I V \Lambda I I \Lambda V I T \Lambda$

Exergue: $C O I I O O$

If, in the readings of both the museum and Reinhart, we construe the strokes "I I" as representing N and H where called for, we can obtain "ATHAN ..." or "ATNA..." If we construe the "I I" as H in my reading, we obtain "ATHNA..." The character between 2 and 3 o'clock in the obverse legend appears to be either an inverted L or a T. If an L, we additionally obtain the "...ILD..." of "...GILDVS" along with the Greek Δ , which should be read as a D and which occasionally appears in the otherwise Latin legends of the VPW series. Consider especially Tomasini's no. 486, which reads $D N L I V V I G I L D V S R E X$ on the obverse and $D N L I V V I G I L \nabla V S R E X$ on the reverse.² The final three characters easily read AVG which is common for the pseudoimperial VPW coins.

The museum's and Reinhart's readings, when enhanced, are quite direct: the first two syllables of Athanagild's name. My own reading points to an omission of one letter, but inserting an A would yield "Ath[a]na...", suggesting the first three of the five syllables necessary to arrive at the full name (presumably $ATHANAGILDVS$). Adding all of the elements together, we can obtain something on the order of: $ATH[a]NA[g] \text{☞} I L D[vs]AVG$ from $\Lambda T I I [a] N \Lambda I I \text{☞} I I L \Delta [vs] \Lambda V C$.

There may be some who will object to the precision in my readings of such a blundered legend, but something approximating the name is surely present. Of all the possible readings (cf. note 1, above), I believe $\Lambda T I I [a] N \Lambda I I \text{☞} I I L \Delta [vs] \Lambda V C$ is the most likely, and that $\Lambda T I I N \Lambda I I I I L \Delta$ suggests $ATHANAGIL \Delta$ sufficiently well that the matter must be considered.

When looking at what we are inclined to regard as "degenerate" legends, we should also recall that orthography was far more fluid in the days before dictionaries regularized notions of "correctness." In his *Chronicle*, John of Biclar (550/556–621/631) (Collins 2001, 125, 129) writes "Athanyldus" for the king's name (*Cronicon* 6) and "Atanaildi" four lines later (*Cronicon* 10)—and this in pen and

2. Tomasini transcribes the legend with an upright Δ on page 239, but see the clear photograph on his plate 25. Other coins in his corpus that include the Δ are no. 226, reading ΔN for Dominus Noster; no. 474, "...GIL Δ ..." for Leovigildvs, as in no. 486; and nos. 278, 390, and 593, which appear to be only filler characters in nonobjective legends.

ink, a medium unrestricted by the difficulties inherent in die cutting. Latin grammar, such as it existed in the sixth century, was imperfectly understood. Those who prepared coin dies may have been marginally literate, but in a world where even men of letters such as John were unhesitatingly inconsistent, die cutters may have taken any spelling as acceptable without regard to case or usage. John's ATANAILD shows a striking surface similarity to the ATIINAIILLD reading advanced above.

The prevailing belief among historians is that Hermenegild and his father, Leovigild (568–586), were the first Visigoths to place their own names on the Visigothic coins, initiating the transition from the series of pseudoimperial VPW *tremisses* to the Visigoths' regal coinage, and that this did not happen until c. 579–580 (MEC, 50). The coin in question now raises the possibility that Athanagild took an initial step in this direction a number of years earlier. That (1) he asserted his rebellious claim to the throne on unauthorized coinage in opposition to Agila (thus c. 550–554)—exactly as Hermenegild later did in opposition to Leovigild c. 579; or (2) he declared his legitimacy during his reign (554–567), before any other Visigothic king; or (3) his name remained in use during the five-month interregnum period following his death are three possibilities surely worth considering.

Taken alone, the legend on this coin would be insufficient to prove that Athanagild's name appears here and possibly appeared on earlier, less degenerate coins as well. So the reading on the *Casa da Moeda* coin prompted an examination of the coin legends of VPW *tremisses* published by Wallace Tomasini (1964) (see the section *Legends on Other VPWs*, below). As a matter of fact, similar letter sequences (possible survivals) can be identified on some of the coins in that corpus, as well—some only marginally persuasive, but others quite blatant.

The weight of the *Casa da Moeda* coin (1.308 g) is lighter than what we might expect based upon Tomasini's figures.³ None of Tomasini's weights for JAN 8 coins (Athanagild's coins—Tomasini 1964, 164) drop below 1.36 g, and most are 1.41–1.45 g (Chart X). Recent studies of weights of pseudoimperial *tremisses* conducted by Marques, Cabral, and Martinho led to the conclusion that while the number of mints increased during the successive reigns of Agila and Athanagild (549–567), the coins continued to be struck fairly faithfully to a standard weight of 1.435 g (Marques et al. 1995, 37, 45–46), corroborating Tomasini's tabular data.⁴ The museum coin's light weight may indicate that its producer(s) had a shortage of gold for

3. The averages (largest weight group) obtained by Tomasini for the JAN 8 and J II 4 groups hover around the figure of 1.42/1.43 g (Tomasini 1964, chart Xa). Note that the average weight (all known specimens) for J II 4 falls to around 1.31 g—almost the same as the *Casa da Moeda* coin (Tomasini 1964, chart Xb).

4. Our coin is 0.127 g (8.85%) below their figure. Modern forgeries of Visigothic coins made by Becker and others are routinely heavier than their genuine models (Miles 1952, 448; MEC, 333), discouraging the possibility that the light weight points to a modern forg-

coining. This would fit well two of the scenarios to be developed below: (1) Athanagild produced a series of coins during his years of rebellion against Agila to finance his operations and purchase influential support, and (2) the coin was struck by an unknown issuer during the five-month interregnum following Athanagild's death.

THE SYMBOL IN THE COIN'S LEGEND

The *Casa da Moeda* coin has other unusual features. Paramount among these is the element that is embedded in the obverse legend, which at first sight could be interpreted as a star (a symbol common on similar coins)⁵ but resembles more a plant motif, something for which there are no parallels among the published VPW legends. If a star, it is neither six pointed nor eight pointed but composed of a vertical stroke with a wide perpendicular serif at the bottom. Added to this are six short horizontal strokes, three on each side of the vertical element, that roughly radiate from a point approximately near the center of the vertical element. The character thus produced (Figure 2) looks more like a tree on a ground line than a proper star, and its identification as such should be doubted.⁶

ery. Also discouraging that possibility of forgery is the coin's very crude style and the fact that the king's name is not clearly legible. Attractiveness and a legible ruler's name were desirable elements among collectors of earlier centuries, and forgers catered to those desires.

5. Stars are found in nos. 380 (reverse), 388 (reverse), 466 (obverse), 467 (reverse), 468 (obverse), 469 (obverse), 560 (obverse), 562 (obverse), 564 (obverse), and 565 (obverse). Crosses also occur in the VPW legends, and are far more numerous.

6. Plants and plantlike motifs are common on coins of the period as principal devices and privy marks. As a principal design, see Grierson and Blackburn's *nummus* (MEC, 33), described as a Vandalic imitation, which has a treelike object on a ground line—very similar to the embedded symbol—or Wroth's "small bronzes" showing palm trees with fruit (*BMC Vand*, 26–27, nos. 68–72). As privy marks, branches of vegetation and shrubs are quite frequent. See, for example, the dated *siliqua* from Carthage (*BMC Vand*, Hunneric 1, plate 1, no. 12), and 4-*nummi* African coins (*BMC Vand*, 7, nos. 12–14; MEC, 51–56). Both types contain a branch or grain (?) symbol: flanking the star in the exergue of the dated coin and before the bust on the 4-*nummi*. See also the *siliquae* of Rechiar (438–456) (e.g. Grierson 1991, no. 14; Cabral and Metcalf 1997; and Marques 1998 for good photographs) or some of the "Valentinianic / Latina Munita" side-panel *tremisses* (Cabral and Metcalf 1997, plate 13, nos. 1, 2), dated by these authors to after c. AD 550 (Cabral and Metcalf 1997, 69).

Several of the side-panel *tremisses* attributed to the Suevi struck in the name of Valentinian contain spearheads in the obverse legend (an element that was accompanied by the full spear on the imperial prototypes). These spearheads typically intrude into the legend and have a floral or vegetal appearance when they occur without the shaft of the spear, as they do on the Suevic coins (e.g., MEC, 288), and they may have been misunderstood by some handlers and die sinkers of the coins, perhaps serving as the ultimate source of the vegetal motif embedded in the legend of the *Casa da Moeda* coin.



Figure 2. The character on the *Casa da Moeda* coin

THE WORD VITA IN THE COIN'S LEGEND

The "VICTOR . . ." of VICTORIA AVGVSTORVM also may be recognizable in the reverse legend of the *Casa da Moeda* coin, although another interpretation is possible. The VITA sequence recalls the legend on Hermenegild's second series, REGIADEVITA, which is probably best interpreted as something to the effect of "life to the king from God."⁷ The possibility that the word *vita* occurs in both places is now raised.

The appearance of the independent word *vita* (life) on coins is a matter that we should consider, as it may link our coin to other ones. A legend with a questionable reading of the word is reported on a half *folles* of Justin I and Justinian I from the Antioch mint, struck in 527. The coin was described by Sabatier (1862, no. 6, *apud BMC Byz*, 24, no. 3), who restored the word to the reading. However, Wroth noted in 1908 that he could not read the word on that coin (judging from Sabatier's published illustration, not the coin itself), and published an identical coin but with a partial legend only, that is, lacking the zone where the word presumably occurs (*BMC Byz*, 24, no. 9).

Hillgarth (1966, 504) followed Wroth (*BMC Byz*): "It is doubtful whether VITA occurs on the coins earlier than the reign of Justin II . . . [565–578]" (*BMC Byz*, 99, no. 2)—this, based upon a rejection of the reading on the half *folles* described by Sabatier and the evidence that the earliest coin known that shows the independent word clearly is a *folles* of Justin II from the Carthage mint (*BMC Byz*, 99, no. 260). However, Wroth also notes "a *tremissis* which reads LAVITA JIVOVAVG, and which has been attributed to Vitalian [a general who led a revolt in the East in 514–515], is undoubtedly a barbarous coin (Visigothic), probably of the time of Justin I or later. (Two specimens in the British Museum)" (*BMC Byz*, 10).⁸

Wroth does not provide his reasons for dating these coins to as early as the reign of Justin I (518–527), but the fact that he does encourages us to consider the possibility that the LAVITA sequence, which we find on the *Casa da Moeda* coin, could occur as early as 518, despite his belief, cited above, that VITA (as an independent word) probably appears no sooner than Justin II (565–578).

7. For a summary of the discussions regarding this, see, e.g., Hillgarth (1966, 502–505).

8. These two coins in the British Museum mentioned by Wroth are Tomasini's nos. 62 and 63, a die pair illustrated by Tomasini on his plates. I am grateful to Kirstin Munro of the Department of Coins and Medals, British Museum, for confirming this determination. The J in the obverse legend reported by Wroth is an S, as Tomasini correctly reads







60. *Obv.*: CHΛHASTA VSPPΛVC
Rev.: VICTORIA ΛCVSTO 
 1.445 ↓ PBN, Gourdon Hoard
61. *Obv.*: CNANAST ASIVSPA
Rev.: VCTO Λ VCVSTO 
 Illegible letter in right reverse field: S, D or ϑ.
 1.43 ↓ PBN
62. *Obv.*: IΛVITA SIVOVIIVC
Rev.: VICTORI ΛCVSTO 
 1.45 ↓ LBM
63. *Obv.*: IΛVITA SIVOVIIVC
Rev.: VICTORI ΛCVSTO 
 1.44 ↓ LBM
64. *Obv.*: IΛVITA SIVOVIIVC
Rev.: VICTORI  VITO 
 1.47 ↓ HSA 16688

Figure 3. Selected legends from Tomasini

Based upon style, Tomasini pushes the date even earlier, to the years of Anastasius (491–518). He includes Wroth's two "British Museum" coins in his own corpus, in 1964, in a minor group (A 2c) of five coins (nos. 60–64) for Anastasius. He expresses concern over the group's date, however, and is not sure where to place it. He puts these coins together because the reverse legends seem to justify it, but, as he points out himself, three of the coins (nos. 62, 63, 64) have obverse legends that are "surprising" and "anomalous in any period." "The surprising barbarisation of the obverse legends in the London and New York pieces makes it difficult to consider these as of this period [Anastasius] or as Visigothic. They do not conform in style to the Justinian or Justin II period, and the obverse legends are anomalies in any period. I suggest that A 2c is non-Visigothic" (Tomasini 1964, 92).

I reproduce the page of the corpus (top of 192) here (Figure 3). Compare the legends on the first two coins, which clearly refer to Anastasius, with those on the last three coins, which clearly differ and could easily constitute a separate group if the legends were the sole criterion. Also note that the obverse legends of nos.

62–64 end in "... VIIVC" or "... VIIVC." If we construe the II as RR, we have the trailing VRRVC sequence of the *curru* groups, which are *late* in the imitative VPW series and share stylistic similarities with the *Casa da Moeda* coin.

Tomasini includes still another coin, no. 660, that has an obverse legend beginning "IIVITA . . .," very similar to his nos. 62–64, but he includes it in his "unsorted" group.

The reverse legend on the *Casa da Moeda* coin may not begin at 8 o'clock. If it begins at 1 o'clock, as do those on Hermenegild's coins, the obverse legends on Leovigild's first "regal" issue, and some of those that come later in the Visigothic series, we obtain: I I I V A V I I A V I T A or I I I V A I I A V I T A, both of which contain the six-letter sequence IAVITA, identical to the sequence in the obverse legends of Tomasini's nos. 62–64 (and very nearly no. 660), now ending the legend instead of beginning it.

The sequence of "... TASIV ..." embedded in the full legend of IAVITASIVOVIIVC (no. 62, etc.) seemed to Tomasini to be a fragment from the name ANASTASIVS, but perhaps it is not. It is also possible that the prototype of the blundered legend was something else, and a different root is preserved, i.e., IAVITASIVOVIIVC, and IAVITA is a more appropriate reading. The meaning of IAVITA, if such was intended, is not apparent. So it should be noted that the IAVITA sequence that appears on a small number of coins that baffled Tomasini (and 660?), may appear again on the *Casa da Moeda* coin.

The conclusion that we can gain from this is that the IAVITA sequence (whatever its meaning) and the independent word VITA (life) *both* probably existed in coin legends earlier than the years of Athanagild's civil war (thus pre-550), and either could be represented in corrupt form in the legend on the *Casa da Moeda* coin. Further implications are (1) that (IA)VITA may be a survival from an earlier and clear, meaningful legend, and (2) that Hermenegild's REGIADEOVITA legend may look back to an earlier coin—one not represented among extant specimens.

One might quickly dismiss the obverse legend of the *Casa da Moeda* coin as another of the blundered legends of Anastasius. However, every one of the 131 coins in Tomasini's "Anastasius" group (with the exception of nos. 62–64—the IAVITA legends), and the additional seven Anastasius coins in the "unsorted" group, begin with "DN" or a corruption of the DOMINVS NOSTER formula. The Anastasius legends are the earliest in the series, as well, and both style and metrology lead to the assumption that the *Casa da Moeda* coin belongs toward the end of the series.

LEGENDS ON OTHER VPWs

A cursory inspection of the legends published in Tomasini's corpus reveals that certain of the *curru* groups have legends that are replete with conjunctions of the

letters A, T, and N in the location of the emperor's name in ways that might suggest Athanagild rather than Justinian. Tomasini (1964, 126) suggested that all coins of the *curru* groups belong to the years of Justin II's reign or later (565 on) and furthermore, that the name preserved in a corrupt and degenerate form between the initial "CVRRV..." and the trailing "...VRRVC" portions of the obverse legend might be that of Justinian. However, two coins should be taken into consideration here. Although not included in the *curru* categories, coin nos. 384 and 385 (group JAN 8) and no. 525 (J II 5a) also have *curru* legends. JAN 8 is attributed to Athanagild, thus establishing a direct Athanagild-to-*curru* connection that dates, perhaps, to the years 565–567 (the two years of overlap between the reigns of Athanagild and Justin II). This invites us to question whether Athanagild's name might not be preserved in some of the *curru* legends.

The question of the name preserved in corrupt form in the *curru* legends (Justinian or another) bears directly on the matter of our coin's legend. If we can identify other coins with legends that preserve the name Athanagild (even in corrupted form), it will help us to weigh the likelihood that the museum coin's legend does as well.

Let us search Tomasini's *curru* legends for letter combinations in the sequence ATHANAGILDVS and compare their frequency to combinations that exist in the sequence IVSTINIANVS. What we seek, specifically, is to identify "carry-overs" of combinations that may have been there before, when the spelling corresponded more closely to what was correct. The intuition is that while whole names and probably well-formed syllables were largely lost by the time of the *curru* legends, adjoining-letter combinations might show a greater degree of survival. This assumption cannot be proved, but a visual inspection of the *curru* legends in Tomasini's corpus reveals obvious differences across the groups, and this is a straightforward means of measuring those differences. Variations in the selection of letters and their sequencing may point to different mints and/or the personal whim or habits of individual die sinkers. What we may be able to suggest with this analysis is that some die sinker(s) were accustomed to cutting legends with one name while other(s) were familiar with another name, and that these memories or habits persisted into the period when legends became nonobjective.

The general formula of the *curru* legend consists of three parts: (1) an initial sequence CVRRV (or variation), (2) a sequence where we should expect to find the eastern emperor's name or a degenerate form of it, and (3) a trailing sequence VRVC (or variation), which is CVRRV backward. Sometimes the trailing sequence is written in retrograde, VЯVЦ, or some combination of backward and retrograde.⁹

9. For example, Tomasini's numbers 579 (CVRVRVI ✕ IRAVRVC) and 585 (CVRVRVTIR ✕ NIVЯVVC).

The legend had thus evolved into an ornamental array of letters and letterlike symbols that was approximately bilaterally symmetric from both ends. The middle portion generally does not show the same tendency toward symmetry, and it is probably better to see it as “unidirectional,” although it is not always clear *which* direction the preferred reading should go in. Indeed, there may have been no preferred direction. Because of the uncertainty regarding the direction of reading, in my search for letter pairs I have included both directions—e.g., IV and VI are both included as possible extractions from “IVSTIN . . .”—similarly TI and IT, etc. Backward letters (notably the N) are counted together with those that are correct.

The letter T is particularly diagnostic. It occurs only once in IVSTINIANVS and ATHANAGILDVS, so it is neutral in terms of frequency. In the first name it occurs correctly with S and I only, while in the second one with A and H. The fact that it often occurs more than once in the obverse legend is a clear indication that the sequence of letters is truly corrupt and highly ornamental and can only be construed as a fragmented memory of a name—the barest of suggestions.

The findings (fully described in the appendix, below) reveal that the various *curru* groups show marked differences in the frequencies of letter combinations and positioning among the letter sequences. The letter combinations in Tomasini's group C3 clearly suggest the name of Justinian. Group C1 also seems to favor Justinian, although the letter A combines with T more than twice as often as it does with I. The three coins that compose group C4 are very different, and it is not clear what is represented in their legends (they look quite Greek and may have some relationship with the Byzantine forces that were occupying parts of the peninsula probably at the very time when these coins were struck). Group C2 would appear to be ambiguous, except in the combinations with the letter T, in which those with A far outnumber those with I. Group C5 shows a strong preference for letter combinations belonging to the name of Athanagild over those of Justinian.¹⁰ Groups C2 and C5 will be examined in greater depth below.

Figure 4 reproduces the C2 and C5 obverse legends from Tomasini (1964, 247, 250–251). On the left, they are reproduced as published. On the right, the CVRRV and VRRVC sequences have been deleted from both ends of the legend in order to

10. Perhaps all that this demonstrates is that some die sinker(s) were pleased to simplify the legends more into T's and A's than into I's and V's. The most extreme form of degeneration seems to be IVIVIVIVIVIVIVIVIV (no. 481). Herein lies a crucial point. If IVIVIVIVIVIVIVIVIV is the ultimate deterioration, why were some die sinkers corrupting and simplifying their legends in the direction of T's and A's? Could it not be because the legends of groups C2 and C5 were evolving away from the name of Athanagild, i.e., away from the legends of coins that are consistent with one of the production scenarios suggested further below (for which we have no previously recognized extant example)—while other legends were, in fact, evolving away from the name of Justinian?

Group C2 obverse legends	with CVRRV / VRRVC removed
560. CVRRVΛИ ☆ ☆ ИТАVЯVC	ΛИ ☆ ☆ ИТА
561. CVRRVAIVV ТАVЯVC	ΛIVV ТА
562. CVRRVΛИ ☆ ☆ ИТАVЯVC	ΛИ ☆ ☆ ИТА
563. CVRRATNIIIVNATVЯVC	ΛTNIIIVNAT
564. CVRATИ ☆ ИZЯVC	ΛТИ ☆ ИZ
565. CVRRVΛИ ☆ ☆ ИТАVЯVC	ΛИ ☆ ☆ ИТА
566. CVRRATI IIIVIVATЯV	ΛТИ IIIVIVAT
567. VRRТАIIIXИТАVЯVC	ТАIIIXИТА
 Group C5 obverse legends	
596. CVRRТА OIIV////////	ТА OIIV////////
597. CVRTATИ NTRTAVC	ТАТИ NTRTA
598. CVRTVI + ИATAVC	TVI + ИATA
599. CVRVΛ////////// NVЯVC	Λ////////// N
600. ΛVRTAVIXΛVЯTAVC	ТАVIXΛVЯT
601. CVRRТАT IIIVVVVTAVC	ТАT IIIVVVTA
602. CVRRТАT IIИTAVЯVC	ТАT IIИТА

Figure 4. Tomasini's Group C2 and C5 Obverse Legends

more clearly reveal the sequence of letters that corresponds to the name preserved therein. If one still wishes to read "Anastasius" into any of these C2 or C5 legends, note that this emperor's name contains the letter S three times. In all fifteen coin legends reproduced here (a total of at least 236 letters, stars, and crosses), the letter S occurs only once (no. 564), and in that single instance it is combined with an N (a combination that does not exist in the name Anastasius) and a V (a combination that exists in both names, Anastasius and Athanagildus, as it would probably appear in a full and proper coin legend—but it is necessary to include the V from the trailing VЯC sequence).

Fully half of the C2 and C5 legends reveal *three-letter combinations* of Λ, T, and N, as well (560, 562, 563, 564, 565, 597, 598). Special attention should be drawn to nos. 560 and 565, which read in retrograde, ΛTN☆☆NΛ; no. 562, which is

identical except that the second N (reading backward) has been replaced by a pair of strokes; and no. 598, which reads in retrograde, "ATAN . . ." (if the Λ of ΛVC is read into the "name").

The average weights (all known specimens) compiled by Tomasini for the C2 and C5 groups are approximately 1.44 g and 1.38 g, respectively (Chart Xb, 293), while Marques et al. (1995, 43) find 1.414 g and 1.379 g for these groups, respectively. Again, our coin is lighter (1.308 g). This does not encourage us to link it in terms of production to either of these *curru* groups, but because it is not a *curru* coin, this should not surprise us. It suggests only that our coin and the *curru* coins were struck in different mints (according to different criteria or supervision) and that both look back (along separate evolutionary paths) to an earlier clear-reading legend that declared the name Athanagild. Note that there is no compelling testimony from the weight data one way or the other about whether our coin is contemporary with the *curru* series—while the C2 and C5 legends argue only for a common ancestor.

POSSIBILITIES REGARDING PRODUCTION

The analysis so far does not point clearly to a date for our coin, and in seeking this, we shall now turn to additional external evidence. Although drawing upon the historical record, the discussions in this section depart from what can be said with certainty and into the realm of speculation, but it is necessary to consider plausible reasons for our coin's production if we are to weigh the likelihood that Athanagild's name appears in its legend, corrupted as it may be. If this name is present (albeit blundered) on the *Casa da Moeda* coin, there are exactly five possibilities regarding the coin's production. It was struck:

- (1) during the civil war (550–554);
- (2) during Athanagild's legitimate reign (554–567);
- (3) after Athanagild's death, during the five-month interregnum;
- (4) after Athanagild's death, during the eleven years of Liuva I's and/or Leovigild's reign(s), and before the introduction of Hermenegild's and Leovigild's new types in c. 579;
- (5) c. 582–585, and the legend refers to a different Athanagild.¹¹

Each of these scenarios is considered below.

Scenario 1 (a Pretender Coinage)

Perhaps the civil war was in progress and Athanagild was not in a location that gave him access to mint facilities or skilled personnel (notably, die cutters). There

¹¹ I am grateful to an anonymous reviewer for this suggestion.

is a quality of "naïve urgency" about this coin that suggests unskilled labor, unsatisfactory conditions, reliance on "copyist" die sinkers, poor understanding of the types (seen especially in the chiton and the way in which the upper section of the palm frond, behind the Victory's head, seems to be confused with the legend), inadequate equipment, etc.—briefly, a range of challenges that we might easily expect to face a usurper engaged in a struggle, one who needed to summon whatever resources he could manage and who might not have enjoyed an overabundance of gold for his enterprise nor comfortable facilities in which to undertake the task of striking coins in order to promote it.

Tomasini ascribed the oft-encountered lax workmanship and irregularities on the coins in his corpus to "unofficial," "non-Visigothic," "Visigothic but of an independent style," or "questionable" mints, or copying, often attributing the work to the Suevi.¹² These characterizations could easily describe the facility of a usurper/pretender such as Athanagild prior to the realization of his goal.

Athanagild's early support in the civil war came from the Hispano-Roman population, in which he exploited the mistreatment they were receiving from Agila, who favored the "Gothic" faith over Nicaean Catholicism (Livermore 1971, 148). Despite his own Arianism, Athanagild saw the political expediency of rallying the support of the Catholic Byzantine forces and the Catholic Suevi—making strange bedfellows with both in order to further his own ambition for Agila's throne. Tomasini's suggestion of a Suevic hand in the production of some of the cruder pieces may be correct, and it may be due to the median role of Athanagild in assembling his coalition of backers opposing Agila. Coins bearing his name may have gone a long way toward legitimizing his claim to the throne in the eyes of his potential and actual supporters and encouraging their numbers (especially if offered in large quantities as bribes or "enlistment bonuses," which may have been hastily struck under less-than-ideal conditions). Placing his name on coinage would also have been a political maneuver having considerable propagandist weight, implying that he was powerful enough to assume the imperial right of issuing gold.

Moreover, it is possible to advance Athanagild's rebellion as a model for Hermenegild's and even to postulate the human agency between the two. We do not know the date of Hermenegild's birth, nor, therefore, his age in 579, when he undertook to assert his independence from his father's rule, but it is possible that Athanagild's civil war was an event that he personally recalled from the days of his youth. Whether he did or not, Athanagild's widow, Godeswintha, now Hermenegild's own stepmother (upon her marriage to Leovigild, himself a widower) and

12. Groups J I 1g, J I 1h, J I 2, J I 3a, JAN 1a, JAN 2b, JAN 2c, JAN 3a, JAN 8a, JAN 8b, JAN 10, J II 4a, and J II 5b.

grandmother-in-law (upon Hermenegild's marriage to Ingundis), certainly *did* remember the turbulent events of 550–554. It is probable that her marriage to Athanagild occurred sometime during those very years and was the key event that turned the tide of conflict in Athanagild's favor, as her own powerful faction of Gothic *fideles* followed her to the rebel's camp.

Although we know little of this powerful woman, she commanded the loyalty of many. John of Biclar, our best and closest source for the events surrounding Hermenegild's rebellion, refers to the "faction of the tyrant queen."¹³ John employed the word "tyrant" with the sense of "usurper," as did Isidore of Seville and Gregory of Tours (Hodgkin 2001, 5:154n1), rather than "despot," and while a bit of uncertainty may be claimed regarding that word, the historical record is unambiguous about other facts. It is completely secure and correct to recognize her strong royal family ties, including:

- wife of two Visigothic Kings: married to Athanagild (widowed, 567) and later to Leovigild (himself widowed from his first wife, Theodosia);
- mother of Brunequilda (by Athanagild), thus becoming mother-in-law of Sigibert I, Frankish king of Austrasia (561–575), upon Brunequilda's marriage to him in 566 (Herrin 1989, 83), the year before Athanagild's death;
- grandmother of Ingundis (the daughter of Brunequilda and Sigibert), who married Hermenegild;
- stepmother of Hermenegild and Reccared, upon her marriage to the widower Leovigild;
- great-grandmother of Athanagild (born c. 582?), son of Ingundis and Hermenegild.

These multiple links, together with the power of her own *fideles*, whose support she evidently had in her own right from the days before her marriage to Athanag-

13. "filius eius Ermenegildus factione Gosuinthe regine tirannidem assumens in Ispali ciuitate rebellione facta recluditur et alias ciuitates atque castella secum contra patrem rebellare facit" (John of Biclar *Cronicon* 54). "[In the] faction of the usurper queen Godeswintha" could be construed as an indication that Godeswintha was now personally involved in *another* civil war (in which she was a major player, or even instigator?), this time intriguing against her second husband, Leovigild. Collins suggests that John's account indicates that the involvement of Godeswintha (a devout Arian, who would have had no reason to urge Hermenegild to rebel on religious grounds) discourages the popular belief that the rebellion was motivated by any Catholic-Arian conflict. He prefers to see the rebellion as a regional power struggle (Collins 1980, 215), in which Godeswintha "persuaded Hermenegild into revolt so as to establish a kingdom in the south of the peninsula to be ruled over by the descendants of her former husband Athanagild. It is notable that it was his name that was given to Hermenegild and Ingundis's son, who was born in the period of the revolt" (Collins 2001, 130).

ild, must have given her considerable influence in court affairs. Perhaps the most revealing illustration of her influence on the events surrounding Hermenegild is the fact that the son born of his union with Ingundis became the namesake of her deceased first husband and usurper—Athanagild.

Godeswintha is a shadowy common denominator in the passions and struggles for thrones that played out in the peninsula in the second half of the sixth century, and it is a pity that we know so little about her, as she was almost certainly a principal agent in most or all of the events mentioned here. Perhaps *both* of the insurrections (Athanagild's and Hermenegild's) reflect the ambitions not so much of the men who led the armies but of an ambitious woman who led the men. Is it not easy to imagine that Godeswintha simply suggested or persuaded Hermenegild to repeat what her first husband had already done (i.e., coin gold in his own name to promote the rebellion)? In fact, we may well suspect that striking gold in the name of a pretender was *Godeswintha's* idea—*twice*.¹⁴

An equally plausible extension of this scenario is that either or both Athanagild and Godeswintha took their original inspiration during the years of rebellion (550–554) from Sigibert's elder cousin, Theudebert I, Frankish king of Austrasia (534–548), who, to the best of our knowledge, was the first of the Successor State rulers to place his own name on his gold coinage (imitative *solidi*, e.g., *MEC*, 389), thus incurring the well-known admonishment of the Byzantine historian Procopius.¹⁵ Whether or not Athanagild copied Theudebert, the example was certainly there only a few years before Athanagild's rebellion, and it is highly improbable that Athanagild, or *any* member of *any* court in the mid-sixth century, had failed to take notice of this recent, radical development in the *res nummaria* of the Visigoths' neighbors to the immediate north.

Scenario 2 (a Legitimate Coinage)

In this scenario, Athanagild issued coins during his reign (554–567). The motivation may have been related to the rising tide of nationalism evident throughout the

14. After Hermenegild's defeat, capture, and execution (probably in 585), and his father's death in 586, his brother Reccared inherited the throne. Out of all the many actors in the passions of these struggles, most of whom had now fallen, Godeswintha remained standing (she would die two years later), and we are told that at the beginning of his reign, Reccared agreed to treat her "as if she were his mother"—surely an indication that many of her powerful *fideles* remained as well, and Reccared recognized the need to keep them satisfied if possible.

15. "And now the Frankish rulers . . . have made a golden coin . . . not bearing, according to custom, the image of the emperor of the Romans, but their own. Although the king of the Persians has been accustomed to strike silver coins as he pleased, it has not been considered right for either him or any other barbarian king to stamp his own effigy on a stater of gold" (Procopius *De bello gothico* 3.33, trans. Hodgkin).

western kingdoms at this time, or perhaps to nothing more than Athanagild's own (continuing) personal ambition. Once again, Theudebert's initiative may have inspired Athanagild to declare his name on his coins—in this scenario, legitimately. The coin's light weight might argue against this scenario, however.

Scenario 3 (an Interregnum Coinage)

Several factors favor this scenario. Athanagild left the kingdom in a state of ruins (Thompson 1969, 18), and the generally lower weights for the coins from the time of Justin II (565) on, as revealed in Tomasini's data (charts 10–11), point to prevailing economic duress. Although the sources do not inform us about the cause of the interregnum, we may surmise that economic and monetary crises contributed to the difficulty of settling upon a successor. Even though the throne was not officially hereditary, the fact that Athanagild left no male heir (Livermore 1971, 157) might also have contributed to the difficulties of succession.¹⁶

There was no king and therefore no royal authority either to issue coins (drawing upon the reserves of the royal house) or to oversee the issue of coins at any of the royal mints—or to influence the practices of nonroyal (?) mints. Who then, if anyone, struck coins during the interregnum? I suggest that a bishop or a *comes* (count) is a likely candidate. Local leaders of this sort would not have seen a cessation of their normal obligations just because the throne was empty. There would have been a continuing need to pay the normal sorts of salaries, bribes, and tribute to other local strong men or counts. Indeed, this sort of pressure may even have increased during the power vacuum. A shortage of freshly struck specie from the crown may have increased regional pressures to provide ready cash through *ad hoc* initiatives. Under these circumstances it is not difficult to visualize a local leader coining his own bullion to meet his immediate cash-flow needs. It is also easy to imagine that in the absence of any royal watchdog, he cheated on the weight of the coins as much as he dared.

Another factor to consider is the lack of the *Dominus Noster* title in the obverse legend. This title was adopted by Visigothic rulers as early as the middle of the fifth century, while the kingdom was still installed in Toulouse. Thurismund (451–453), for example, had styled himself as *Dominus Noster* on a stone inscription, apparently an assertion of his nation's prowess upon contributing to the defeat of the Huns in 451 (Mathisen and Sivan 1999, 17), and Euric (466–484) is

16. Liuva I, who finally emerged as ruler, seems not to have been enthusiastic about accepting the throne. Instead of moving to Toledo, which had been newly established by Athanagild as his royal residence, or some other central location, he remained on the periphery of the Kingdom, in Narbonne. Very soon after ascending, he associated his brother Leovigild as co-ruler (the date is uncertain, but most authors now accept 568 or 569—e.g., MEC, 43) and turned over the lion's share of the kingdom and all of its affairs to him.

styled as Dominus in the inscription on the Roman bridge at Mérida, commemorating his repairs to it (Vives 1942, no. 363). Striking coins was still the business of the emperors at these times, however, and the Visigoths were not issuing anything in their own names, as far as we know. It is therefore impossible to know if Athanagild would have added the DN title to his own coins (scenarios 1 and 2). It is therefore equally impossible to know if the title was eliminated from coins of the interregnum after having been used during either the civil war or the legitimate reign, or both.

Leovigild took the DN title on his J II 4-style coins and on a few others. Recared (586–601) then followed his father's example on the coins from some of his mints, and Liuva II (601–603) did the same. However, the DN title was thereafter abandoned until being briefly revived by Chindasvinth (642–649).¹⁷ So although the title appears not to have been employed on the coins of many of the nationalistic rulers (only four), it was used on the coins of the first three nationalistic-period kings—in other words, those coming immediately after Athanagild and Liuva I. This raises the suspicion that if Athanagild did have a legitimate coinage, it may have included the DN title, and his successors took their lead from him.

An attractive argument that would account for the lack of the title on interregnum coins is the simple lack of a king to bear the title (although AUG does appear). If the *Casa da Moeda* coin was struck during the interregnum by a bishop or count, etc., it is possible that the DN was withheld in deference to the empty throne while the name of the deceased king was retained, as his was the most recent name (perhaps until then the only) to have appeared.

It is of particular interest that Hermenegild did not use the DN title on his pretender coinage. This may add support to the first scenario, above, which suggests that Hermenegild borrowed heavily from a model provided by Athanagild.

Scenario 4 (Struck During the Reign[s] of Liuva I and/or Leovigild)

This is probably the least likely scenario of all those proposed. If the practice of declaring the name of the Visigoths' king in coin legends had been adopted during Athanagild's years, it is doubtful that his name would persist into the reign of Liuva I and Leovigild, as this is when the new rulers would declare their own names.

17. Tomasini (1964) has 12 coins: nos. 486–494 (group J II 4), nos. 539 and 540 (J II 7), and no. 609 (INCLITVS REX, reading unclear). Miles (1952) includes 35 “DN” coins for Leovigild: nos. 2, 3 a–b, 4, 7 a–h, 11 a–b, 28 a–d, 36 a–c, 38 a–h, 39, 40 a–c, and 41 a–b. Apparently following this example, Recared (586–601) and Liuva II (601–603) also used the title at some of their mints: Miles (1952) lists four for Recared: nos. 92 a–d, and twelve for Liuva II: nos. 118 a–b, 119, 120 a–b, 121, 122 a–c, 123, and 126 a–b. The DN was abandoned thereafter, until being revived briefly by Chindasvinth (642–649). Miles (1952) lists eight coins: nos. 321 a–b, 322 a–d, and 325 a–b.

Scenario 5 (a Different Athanagild)

Perhaps the Athanagild referred to is the infant son of Ingundis and Hermenegild. This child was born sometime during the hostilities between his father and grandfather, c. 582, and taken by his mother as she fled Hispania with Byzantine forces before or upon Hermenegild's death, probably in 585. Young Athanagild ended up in Constantinople, where he apparently died c. 588/9—Ingundis having perished on the journey there. No elevation to kingship of the infant is recorded, but it is interesting that the Frankish court sent a diplomatic mission to the emperor in 588 seeking the boy's release and restoration to his mother's family, and that among the correspondence are two letters (from Childebert II and Brunequilda, uncle and grandmother, respectively) to the child, himself, each addressing him as "King Athanagild" (CDL iv. I. 24–40, *apud* Hodgkin 2001, 5:320–321). Perhaps an elevation took place following his father's capture (or death), championed at an unrecorded place and time by diehards to Hermenegild's cause as it collapsed. In this scenario, there is continuing defiance of Leovigild, manifested in the elevation of Hermenegild's heir, and a symbolic, crudely struck coinage slapped together by bitter-end faithful troops—a "last hurrah" in the final days.

The coin's "naïve urgency," light weight, and IAVITA sequence (which reminds us of Hermenegild's REGIADEOVITA legend) lend support to this scenario. We must wonder, however, if such an elevation would have been recognized by the Franks, or even known to them. Moreover, this scenario would posit the *Casa da Moeda* coin chronologically after the *curru* coins, or at least contemporaneous with (some of?) them, in the turbulent years of the transition to the new types. This would dramatically compress the time allowed for the C2 and C5 legends to degenerate from a clear-reading name of Athanagild and would cast doubt upon the significance of the letter combinations reported above.

SUMMARY

We have considered a fair amount of evidence—hard evidence both internal to the *Casa da Moeda* coin and external to it (Tomasini's corpus) and soft evidence in the form of scenarios constructed within the historical setting—arguing for the belief that Athanagild's name appeared on VPW coins at some point and under some circumstances. This is supported not only by the legend on the *Casa da Moeda* coin itself but by the separate and independent analysis of frequency of two-letter combinations that exist in the names of Justinian and Athanagild in all of Tomasini's *curru* groups and three-letter combinations in the C2 and C5 groups. These analyses reveal that in the C5 group (and possibly in the C2 group) there are more letter combinations that exist in the name of Athanagild than exist in the name of Justinian. My interpretation of this is that the legends in these groups may be corruptions of legends on earlier coins (nonextant) that named Athanagild.

If Athanagild was bold enough to put his name on coinage before and/or after gaining the throne, why would he or his successors revert to imitative legends (the JAN 8, J II 4, and *curru* groups) thereafter? An appealing answer to this question is that Athanagild put his name on his pretender coins (scenario 1) before 554, the year in which the Byzantine forces moved into the southeastern peninsula at his own invitation¹⁸ and in which he ascended the throne. Once the imperial army was present, however, he and his successors thought it better to revert to “imperial” legends (blundered, as they were), in the traditional deference to the emperor, who now had an expeditionary army maneuvering on the peninsula with the ultimate goal of restoring the “lost Province of the Spains” to the empire. One might wonder why the Visigothic rulers would *care* what the emperor thought, considering that they were now engaged in open hostilities with the imperial army, but international relations are complicated even (especially) during times of conflict. Desisting from adding their own names to the coinage (thereby restoring the emperor’s “rightful” exclusivity to the legends of the world’s gold coinage) may have been a negotiating measure aimed at mollifying the emperor and encouraging his military withdrawal—a measure that failed and was ultimately abandoned in 579.

As a final thought, let us note that Tomasini’s corpus is not the only published source where it is possible to find coins with legends that may look back to Athanagild. The Fitzwilliam Museum (Cambridge University), for example, has a late VPW *tremissis* (MEC, 207) with the legends OVRRTINIVYAC (obv.), VVRTINIVYAV (rev.), and OIO (exergue). Stripping away the *curru* sequences, we are left with ATINII and ANIT (in retrograde) on the obverse and reverse, respectively both of which suggest the name Athanagild, especially the obverse, which should be compared to ATI INAI I [. . .] on the *Casa da Moeda* coin and ATANAI [. . .] in John of Biclar’s Chronicle (*Cronicon* 10).¹⁹

I offer my analysis and thoughts that admit to plausible circumstances in antiquity under which the very unusual *Casa da Moeda* coin could have been produced. Alone, its uncertain legend is inconclusive, but upon revisiting Tomasini’s corpus and finding *other* coins whose legends might look back to Athanagild, I believe that the matter deserves further consideration. It is hoped that other investigators will, with this line of thought in mind, look closely at specimens of late VPW coins that are available to them.

18. Vallejo Girvés argues for disembarkation in the vicinity of Gibraltar in the spring of 552 (Vallejo Girvés 1993, 109).

19. Note further that the bust on the Fitzwilliam coin has the unusual forward-sweeping hair behind the diadem, as does the *Casa da Moeda* coin, although the coin shows a much finer style, overall, than does the *Casa da Moeda* specimen.

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APPENDIX

In the *curru* groups of Tomasini's corpus, the letter T is found to combine 107 times with letters, once with a cross, and once with a blank space (total 109), as follows:

A 52 combinations with T
 I 25 combinations with T
 N 12 combinations with T
 V 11 combinations with T
 R 5 combinations with T
 O 1 combination with T
 M 1 combination with T
 cross 1 combination with T
 space 1 combination with T
 total 109

From just this we can see that the ATHANAGILDVS possibility occurs more than *twice as often* (52 times) as the IVSTINIANVS alternative (25 times). However, the issue demands a far deeper examination than this. Where Tomasini notes that another reading differs from his own, I have opted for Tomasini's reading.

In group C1, the following letter combinations are found (the number of occurrences appears below the letter pair):

IV	VI	TI	IT	IN	NI	IA	AI	AN
11	10	6	3	2	7	5	1	2

total = 47 letter combinations that exist in the name IVSTINIANVS

AT	TA	AN
10	12	2

total = 24 letter combinations that exist in the name ATHANAGILDVS

There are 31 letters T, combining 39 times (excluding combinations with the CVRRV or VRRVC sequences): with A (22 times), I (9), V (3), N (3), R (2).

In group C2, the following letter combinations are found (note that the SV combination is made by including the V of VRRC (coin no. 564), and perhaps should be excluded):

IV	VI	TI	IT	IN	NI	AN	(SV)
4	1	1	1	2	2	2	(1)

total = 13 (14) combinations

AT	TA	AN
5	6	2

total = 13 combinations

There are 11 letters T, combining 19 times: A (11), N (5), I (2), blank space (1).

In group C3, the following letter combinations are found:

IV	VI	VS	TI	IT	IN	NI	IA	NV
14	11	1	9	2	2	4	2	2

total = 47 combinations

AT	TA	VS
3	2	1

total = 6 combinations

There are 15 letters T, combining 21 times: I (12), A (5), N (2), O (1), cross (1).

In group C₄, the following letter combination is found:

NV

3

total = 3 combinations

There are 3 letters T, combining 6 times with the letter V.

In group C₅, the following letter combinations are found. Note that the TA combination is made four times by including the A of AVC (coins nos. 597, 598, 600, 601), and the NV combination is made once by including the V of VRVC (coin no. 599), and perhaps should be excluded:

IV	VI	TI	IN	NI	NA	(NV)
2	2	2	1	1	1	(1)

total = 9 (10) combinations

AT TA NA

4 6 (10) 1

total = 11 (15) combinations

There are 15 letters T, combining 24 times: A (14), R (3), N (2), I (2), V (2), M (1).

A Note on the Liberty Reverse Type of the Connecticut Coppers (1785–1788)

PLATES 39–43

OLIVER D. HOOVER*

Using the evidence of ancient Roman coins and the contemporary coinages of Great Britain and the United Netherlands, the author argues that the depiction of Liberty on Connecticut coppers had multiple levels of meaning.

On July 26, 2006, American Numismatic Society Curator of North American Coins and Currency Robert Wilson Hoge gave a general introduction to the large collection of Connecticut coppers held by the ANS. During his presentation, the question was raised as to whether the seated female figure depicted on the reverse should always be identified as the personification of Liberty, as has been traditional, or whether in some cases she might be more properly referred to as Britannia, the personification who had graced regal English coppers circulating in North America since 1672.

In order to answer this question, it is necessary to first review the Connecticut Coppers Act (October 20, 1785), which gave Samuel Bishop, Joseph Hopkins, James Hillhouse, and John Goodrich a monopolistic right to produce copper coinage for the state of Connecticut, and stipulated that the coins were to bear the following Impression or Stamp (Viz) a mans head on the one side with a Circumscription in the Words or Letters following (Viz) AVCTORI: CONNEC: and on the other side the Emblem of Liberty with an olive branch in her hand with a circumscription in the Words and Figures following (Viz) INDE: ET . LIB: 1785: (Crosby 1875, 209).

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Clearly, to the framers of the Act there was no question that the reverse type was intended to represent Liberty.

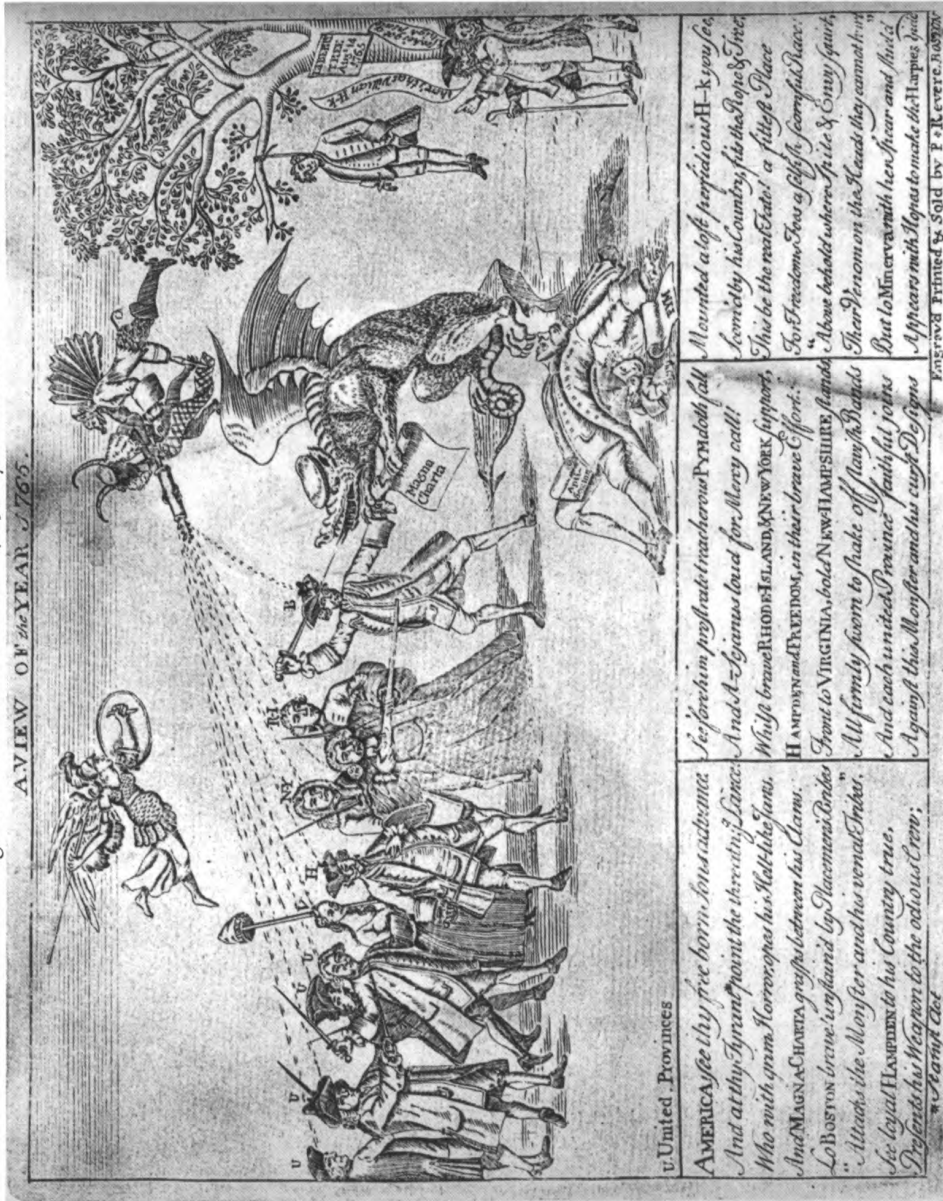
The depiction of the female figure as Liberty is assured on the varieties where she is depicted holding a pole with a liberty cap on the tip (Plate 39, no. 1). The use of this cap as an attribute of Liberty was derived from the custom and iconography of the ancient Romans, who knew it as a *pileus*. The sumptuary laws of ancient Rome closely regulated the form of dress permissible to different classes of society. The felt *pileus*, or liberty cap, was prescribed as the identifying headgear for men who had been freed from slavery either through purchase or manumission (Plaut. *Amphit.* I.1.306; Persius 5.82; Livy 24.32; Martial *Epigr.* 14.1; Seneca *Epist.* 18). During the dying days of the Roman Republic, the liberty cap also took on political meaning as an emblem of the cabal of Liberators responsible for the assassination of Julius Caesar in 46 BC. The most famous of the Liberators, Marcus Brutus, even portrayed this symbol of liberty on a series of silver *denarii* (Plate 39, no. 2) as a means to advertise the (short-lived) freedom from tyranny that Rome enjoyed thanks to the assassins' daggers (Crawford 1974, 741 with no. 508/3; Plut. *Brut.* 40; Dio 47.25). *Libertas*, the Roman personification of Liberty, frequently appeared on coins throughout the Roman imperial period holding a *pileus* as one of her identifying attributes (Plate 39, no. 3). It is not surprising that the liberty cap was also adopted as the special attribute of Liberty by the designers of the Connecticut coppers, particularly when we consider that the early United States consciously looked to the Roman Republic as a model of good government and that King George III was regularly cast as a tyrant in revolutionary rhetoric (Sellers 1994; Rahe 1992; Korshak 1987).

Table 1: Connecticut Issues with Liberty Cap

Date	Miller Numbers
1785	1-E, 2-A, 3-A, 3-B, 3-F, 3-L, 4-A, 4-C, 4-D, 4-F, 5-F, 6-A, 6-F, 6-G, 6-I, 6-K, 6-M, 7-D, 8-D
1786	1-A, 2-A, 2-D, 3-D, 3-G, 3-R, 4-B, 4-C, 4-G, 4-L, 4-M, 4-N, 4-O, 4-P, 4-Q, 4-R, 8-O
1787	1-A, 1-C, 1-L, 1-M, 1-WW2, 4-L, 6-M, 7-I
1788	16-O, 17-O, 17-Q

Although the image of Liberty with the liberty cap is most frequently associated by American numismatists with the influential obverse type of Augustin Dupré's *Libertas Americana* medal of 1783 (Betts 1894, no. 615; Breen 1987, 159, 181; Fanning 1989; Adams and Bentley 2007) (Plate 40, no. 4), the American usage of the image can be traced back to Paul Revere's engraving of "A View of the Year 1765" (Figure 1), in which she appears leading America's "freeborn sons"

Figure 1. "A View of the Year 1765," by Paul Revere



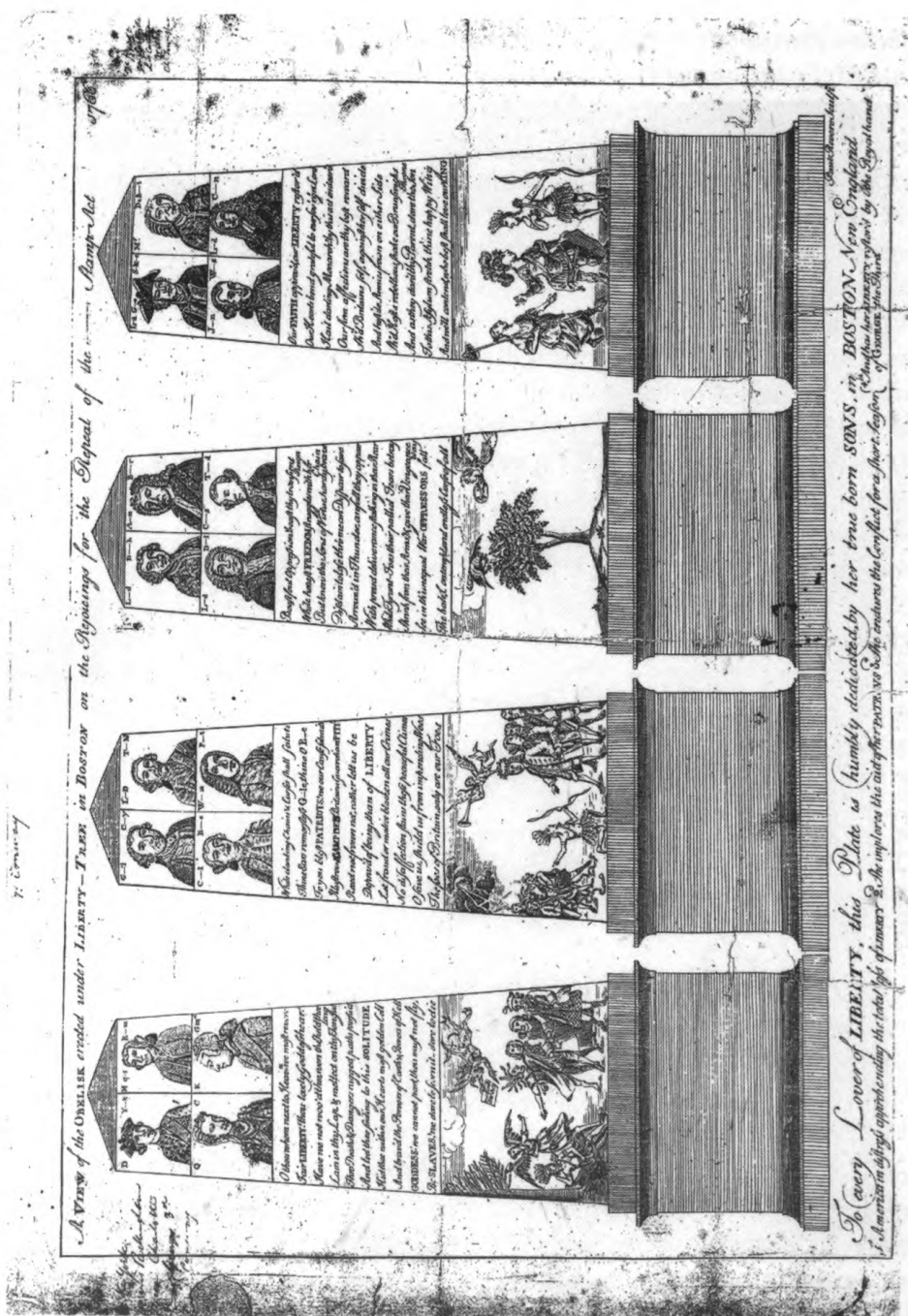


Figure 2. “A View of the Obelisk Erected under Liberty-Tree in Boston on the Rejoicings of the Repeal of the Stamp Act 1766,” by Paul Revere

against the Stamp Act, allegorized as a monstrous dragon. This illustration was reproduced for the July 7, 1774, edition of the *Massachusetts Spy, or, Thomas's Boston Journal* as well as on the obelisk erected by the Sons of Liberty on Boston Common in May 1766 (Figure 2). Liberty also carries the *pileus* (probably borrowing from Paul Revere's model) on the so-called allegorical notes authorized by the Provincial Convention of Maryland in 1775 (Newman 1997, 170) (Plate 40, no. 5).

The symbolism of the liberty cap proved so popular and meaningful that it continued to be an important attribute for the depiction of Liberty on United States half cents and large cents (1793–1797) (Plate 40, no. 6), half dimes (1837–1873), dimes (1837–1891), twenty cents (1875–1878), quarter dollars (1838–1916), half dollars (1807–1915), dollars (1836–1873, 1878–1921), quarter eagles (1796–1808, 1821–1834), half eagles (1795–1832), and eagles (1795–1804). Indeed, the image of Liberty carrying or wearing the *pileus* or the liberty cap alone was so successful on an international level that it was also frequently adopted for the coinages of the various revolutionary and republican governments of France, from the first coinage of the Constitutional government in 1791 to the present (Gadoury 1989) (Plate 40, no. 7), as well as on the republican coinages of Mexico (Plate 40, no. 8) and a host of other Central and South American states beginning in the 1820s.

DUTCH LIBERTY ON THE "MUTTONHEAD" COUNTERFEITS (MILLER 1787 1.2-C AND 1.2-MM)

An interesting variant of the liberty-cap theme is found on the reverse of the so-called Muttonhead obverse counterfeit variety (Plate 41, no. 9) (Miller 1920, nos. 1787 1.2-C and 1.2-mm), believed to have been produced by John Bailey in New York City (Trudgen 1993). On these coins, Liberty does not carry the usual liberty cap at the end of her pole but rather a narrow-brimmed capotain hat of the type that has become familiar from modern depictions of the Pilgrims and which was a popular form of European headgear from the late sixteenth to the mid-seventeenth centuries. On the "Muttonheads," Liberty also appears with somewhat less modesty than on the other official and unofficial issues in the Connecticut series, for here she is shown with bared breasts. Betts believed that this atypical state of undress was intended to simulate wear from circulation as a means of lending credibility to bad coin (Betts 1886), but this cannot explain the transformation of the *pileus* into a capotain hat. Instead, it looks like the counterfeiter has attempted to remodel the design by taking elements of the Liberty who appeared on coins issued by the provinces of the United Netherlands in the seventeenth and eighteenth centuries (Krause and Mishler 1997, nos. 7, 8.1–8.5, 14, 17–18, 60, 63.1–63.3, 73–73a, 76, 80–80c, 85, 87, 89–89a, 95–95.4, 97.1–97.3, 100–100.2, 102–102b, 110–110b, 113–113a, 117, 135–135a, 139, 141.1–141.2, 150–150a). On these issues, she symbolizes the hard-won freedom from Spanish rule gained by Dutch

rebels in the Eighty Years' War (1568–1648). Coins with the type of Dutch Liberty (*Vrijheid*) with bared breast and carrying the so-called free-hat (*vrijheidhoed*) (Plate 41, no. 10) had been circulating in the Massachusetts Bay Colony since the early seventeenth century and were important enough to warrant their inclusion as “three guilder pieces of Holland” in the list of coins rated by Queen Anne's Proclamation of 1704 (Crosby 1875, 29; Mossman 1993, 50). This Liberty type or, more frequently, the symbol of the free-hat alone was also commonly featured on medals struck by France and the Netherlands in 1782 and 1783 (Plate 41, no. 11) as a means of recognizing the independent status of the American Confederation (Betts 1894, nos. 602–603, 607–609).

Bailey's decision (odd for a counterfeiter) to depart so noticeably from the usual typology of Liberty on the Connecticut coppers may possibly be explained as an attempt to give the Connecticut type more of a New York flair. A Dutch-inspired Liberty would have been particularly appropriate for New York, a city originally founded by the Dutch West India Company as New Amsterdam in 1625 and which became an English possession in 1664. Despite the change in ownership, New York remained home to an important Dutch population in the eighteenth century, which still occasionally provided the city's mayors (i.e., Jacobus van Cortlandt [1710–1711, 1719–1720], Johannes Jansen [1725–1726], and Robert Lurting [1726–1735]). Dutch influence even reached into the seal of the Mayoralty of New York City under English rule (Plate 41, no. 12), which included “the wings of a windmill placed saltireways,” probably taken from the arms of the powerful van Cortlandt merchant family, which produced two of New York City's mayors, Stephanus (1677–1678, 1686–1688) and Jacobus van Cortlandt (1710–1711, 1719–1720). Likewise, the quartered beavers of the New York seal are derived from the seal of New Netherland under the Dutch West India Company (Plate 41, no. 13).

Personifications of Liberty and Justice appear with similar open or low-cut tops, after the Dutch style of Liberty (and her Roman models), on the original great seal of the state of New York, which appears in miniature on the 1787 patterns of Thomas Machin (Breen 1987, nos. 989–990) (Plate 41, no. 14) and (not surprisingly) John Bailey (Breen 1987, nos. 978–979). The conflated personification of Liberty/Justice on the 1786 NON VI VIRTUTE VICI coppers (Plate 42, no. 15) intended for use in New York State also dresses in this manner. While the immediate source for the Muttonhead reverse type is almost certainly Dutch Liberty, as usual the typology ultimately looks back to Roman models. Both Roma, the personification of the city of Rome as the cradle of republicanism and the seat of a great empire (Plate 42, no. 16), and *Virtus* (Plate 42, no. 17), the personification of manly virtue, were regularly depicted in similar fashion on Roman coinage. The obvious appeal of such models for the heirs of the American Revolution and the Dutch Uprising almost goes without saying. However, it is interesting to note that

when the vignettes were designed for the Maryland allegorical notes of 1775 (Plate 40, no. 5), it is actually Britannia rather than Liberty who wears the open style of dress, which serves to underline the sometimes ambiguous nature of depictions of Liberty in the American context.

LIBERTY AS BRITANNIA

As we have seen, though American images of Britannia occasionally borrowed features from Liberty, on the coinage it was far more common for Liberty to borrow iconography from Britannia. When Paul Revere designed his image of the Goddess of Liberty for the 1776 Massachusetts coppers (Plate 42, no. 18) (Crosby 1895, 304; Breen 1987, 59–60, nos. 702–704), she was shown in an identical pose and similar dress to that of Britannia on English coins. She even continued to sit on a globe, just as in the English model. Liberty is even more Britannia-like in her depiction on the Connecticut coppers. Indeed, when the *pileus* or free-hat is absent from the type, as it is from many official and counterfeit Connecticut coppers produced in the period from 1786 to 1788 (see Table 2, below), there is nothing to clearly identify the female figure as Liberty, and therefore she seems to revert to being a depiction of Britannia, the kingdom from which the American Confederation had only recently emancipated itself. That some individuals continued to recognize the type as representing Britannia rather than Liberty is suggested by the Machin's Mills counterfeits that mule the Connecticut obverse with a Vermont reverse featuring a Union Jack on the shield (Miller 1920, no. 1788 M.1-I; Bressett, no. 25-U) and the "Bungtown" imitations that copy this die muling and offer a new reverse that explicitly names Britannia (Miller 1920, nos. 1786 M.8.1-T and 8.2-U).

Table 2: Connecticut Issues Without Liberty Cap

Date	Miller Numbers
1785	---
1786	5-H, 5-I, 6-K, 7-K, 5-O.2
1787	1-VV2-B, 3-G, 5-P, 9-D, 13-D, 8-N, 8-O, 9-E, 9-R, 10-E, 11-E, 11-K, 12-Q, 14-H, 15-F, 15-R, 15-S, 16-k, 16-l, 16-m, 16-n, 16-p, 16-u, 16-NN, 17-g, 18-g, 19-g, 20-a, 21-DD, 22-g, 24-g, 24-FF, 25-b, 25-m, 26-a, 26-kk, 26-AA, 27-a, 28-m, 28-n, 28-o, 29-N, 29-a, 29-n, 29-o, 29-p, 30-X, 31-r, 30-hh, 31-gg, 32-X, 32-aa, 33-T, 33-W, 33-Z, 33-l, 33-q, 33-r, 33-s, 33-ff, 33-gg, 33-hh, 33-EE, 33-SS, 34-k, 34-ff, 36-l, 36-k, 36-ff, 37-B, 37-I, 37-e, 37-h, 37-k, 37-cc, 37-ff, 37-HH, 37-RR, 37-TT, 38-l, 38-GG, 39-h, 39-ee, 39-ff, 40-N, 40-kk, 41-ii, 42-o, 42-kk, 43-Y, 44-W, 44-Z, 45-CC, 46-BB, 47-a, 48-g, 49-Z, 50-F, 52-G, 53-FF, 55-F
1788	1-I, 2-D, 3-B, 4-B, 4-K, 4-R, 5-B, 6-H, 7-E, 7-F, 7-K, 8-K, 9-E, 10-C, 11-G, 12-C, 12-E, 12-F, 13-A, 14-A, 14-L, 15-L, 16-D, 16-H, 16-L, 16-N, 17-Q

Table 3: Connecticut Issues with Blank Shield

Date	Miller Numbers
1785	---
1786	1-A, 2-A
1787	1-A, 1-C, 1-L, 1-M, 1-VV, 1-WW, 2-B, 4-L, 5-P, 6-M, 7-I, 9-D, 13-D, 8-N, 8-O, 9-E, 10-E, 11-E, 11-K, 15-F, 16-k, 16-l, 16-m, 16-n, 16-p, 16-u, 16-NN, 17-g, 18-g, 19-g, 20-a, 21-DD, 22-g, 24-g, 24-FF, 25-b, 25-m, 26-a, 26-kk, 26-AA, 27-a, 28-m, 28-n, 28-o, 29-N, 29-a, 29-n, 29-o, 29-p, 30-X, 31-r, 30-hh, 31-gg, 32-X, 32-aa, 33-T, 33-W, 33-Z, 33-l, 33-q, 33-r, 33-s, 33-ff, 33-gg, 33-hh, 33-EE, 33-SS, 34-k, 34-ff, 36-l, 36-k, 36-ff, 37-B, 37-I, 37-e, 37-h, 37-k, 37-cc, 37-ff, 37-HH, 37-RR, 37-TT, 38-l, 38-GG, 39-h, 39-ee, 39-ff, 40-N, 40-kk, 41-ii, 42-o, 42-kk, 43-Y, 44-W, 44-Z, 45-CC, 46-BB, 47-a, 48-g, 49-Z, 53-FF
1788	1-I, 13-A, 14-A, 16-N

The image of Britannia holding an olive branch and spear, while seated left on a globe with a shield propped against it, first appeared on the 1672 copper halfpence and farthings of King Charles II (Plate 42, no. 19) (Spink 2005, nos. 3393–3394). This basic type was retained as the standard reverse for English copper denominations until the 1775 copper issues under King George III (Spink 2005, nos. 3774–3775), after which the type was remodeled to advertise the British overseas empire (Plate 42, no. 20) (Spink 2005, nos. 3776–3782).

Like the liberty cap, the basic form of Britannia, which was virtually adopted wholesale for American Liberty, also looked to Roman iconographic models. The model for Britannia appears to have been a brass *sestertius* of the Emperor Antoninus Pius (AD 138–161), depicting the personification of the province seated on a globe holding a spear and a military standard (Plate 42, no. 21) (Mossman 1993, 108; Mattingly and Sydenham 1930, 121, no. 744).

It is important to point out, however, that while the Connecticut types lacking the liberty cap appear to depict Britannia rather than the expected Liberty, the engravers never made the identification with Britannia clear by including the Union Jack on her shield (but for this feature on some counterfeit issues, see above). This is in contrast to the contemporary Vermont coppers of 1787 and 1788, which regularly used a shield with a Union Jack (Plate 42, no. 22).

In many cases (see Table 3, above), the shield that might clearly identify the seated figure as Britannia has been left blank. Because many of these issues were counterfeits or at least produced under a cloud of suspicion by James Jarvis and Company, it is tempting to think that their producers avoided including a blazon on the shield in order to obscure the identity of the figure and the issuing authority. In this way it was possible to exploit the typology of Britannia, which had been an instantly recognizable feature of the halfpence used in the English colonies,

without explicitly identifying her as such. Likewise, the blank shield also avoided clearly identifying the authority of Connecticut (see below), although the Latin-literate could determine this from the legend *AUCTORI CONNEC*. The historically conservative nature of people with respect to the form and typology of their money made the retention of a very Britannia-like personification for the Connecticut coppers a wise business decision, and may in part have contributed to the general success of the Connecticut series.

LIBERTY AS CONNECTICUT

On a third level, the female figure on the Connecticut coppers is probably intended to serve as a personification of the state of Connecticut, for on the majority of the official (and some counterfeit) issues from the beginning of the series her shield is blazoned with the three grape vines found on the great seal of Connecticut (Plate 42, no. 23), adopted on October 25, 1711 (see Table 4, below). Something similar occurs on the shield associated with the Vermont seated-figure types of 1786 (Bressett 1976, nos. 7-F.4, 8-G, 9-H, 9-I), which depicted either one or four sheaves of grain (Plate 42, no. 24), derived from the seal designed by Ira Allen in 1778, and on the shield found on the NOVA EBORAC coppers (Plate 42, no. 25), which is blazoned with the rising sun motif from the New York state seal.

Since the Union Jack on the shield of Britannia on British coins was the main device by which she was distinguished from the host of other female personifications that populated early modern European iconography (Plate 43, no. 26), it is likely that when coin users saw the grape vines on the shield of the Connecticut coppers they were intended to recognize the personification as the state of Connecticut.

Table 4: Connecticut Issues with Grape Vines on Shield

Date	Miller Numbers
1785	1-E, 2-A, 3-A, 3-B, 3-F, 3-L, 4-A, 4-C, 4-D, 4-F, 5-F, 6-A, 6-F, 6-G, 6-I, 6-K, 6-M, 7-D, 8-D
1786	2-D, 3-D, 4-G, 4-R, 5-B, 5-C, 5-F, 5-G, 5-H, 5-I, 5-L, 5-M, 5-N, 5-O, 5-P, 5-Q, 5-R
1787	9-R, 12-Q, 14-H, 15-F, 15-R, 15-S, 37-cc.2, 39-ee, 50-F, 51-G.2, 55-F
1788	2-D, 3-B, 4-B, 4-K, 4-R, 5-B, 6-H, 7-E, 7-F, 7-K, 8-K, 9-E, 10-C, 11-G, 12-C, 12-E, 14-L, 15-L, 15-P, 16-D, 16-H, 16-L, 16-O, 17-O, 17-Q

If we were intended to read the figure only as a generic American Liberty, there would have been no need for the addition of the blazon taken from the state seal. Instead, we might expect the bar device normally used on shields as the arms of the United States, such as we find on the federal reverse type of contemporary New

Jersey coppers (Plate 43, no. 27). Likewise, if a generic Liberty were intended, the designers of the Vermont issues of 1786 and the NOVA EBORAC coppers, which looked to Connecticut for their models (Bonjour 1987), probably would not have been so diligent in emblazoning the shield with elements taken from their respective state seals. Not only would the state arms have had potential appeal to the users of the coins, but perhaps more importantly, they would have appealed to the members of the state legislatures responsible for approving minting contracts.

CONCLUSIONS

In this brief review of the several forms of Liberty that appear on official and unofficial Connecticut copper issues, it seems clear that while the Connecticut Coppers Act blandly required the reverse type to be an "Emblem of Liberty," the various designers and producers went about creating an image with multiple levels of meaning. The inclusion of the *pileus* or liberty cap made the personification identifiable as the demanded Liberty type and a general symbol of the freedom from British rule that the new American Confederation had earned during the Revolutionary War. In short, it was an emblem of national patriotism.

However, by adding the grape vines of the state seal to Liberty's otherwise vacant shield, she also became a personification of the state of Connecticut and therefore a symbol of state pride. Thus the typology was made to appeal to both national and state aspirations, which may have been especially important in the Confederation period, considering the traditionally parochial nature of the provincial and state assemblies. Even after the unifying experience of the Revolutionary War, in the late eighteenth century it was not at all uncommon for individuals to still think of themselves as Massachusettsites, New Yorkers, or Connecticutites first and citizens of the Confederation (the United States after June 21, 1788) second. This tension between state parochialism and federal nationalism continued to fester into the nineteenth century, until it at last broke out in the American Civil War (1861–1865), also known as the War Between the States, depending on whether one views it as a struggle to preserve the federal organization of the country or as a struggle for states' rights (McDonald 2000). Considering the importance of local state identities to their citizens, it was perhaps unavoidable that some recognizable badge of Connecticut should have been added to the Liberty on the coins struck for that state.

While, as we have seen, the image of Liberty was designed to appeal to people whose hearts burned with national patriotism as well as local pride, her extremely close resemblance to the old Britannia of the English halfpence should probably be attributed to colder business motives. By developing a type that looked very similar to the longstanding English halfpenny, it was no doubt hoped that the Connecticut coinage would benefit from the relative (but quickly eroding) trust that the public

had in regal English halfpence, or at least that it would easily circulate alongside the numerous counterfeit halfpence that found their way to North America in the eighteenth century (Mossman 1993, 113–121; Newman 1976, 143–150).

One suspects that it was partially the combination of patriotic, local, and traditional elements of the design that made the Connecticut coppers one of the more successful state coinages in their day. The general popularity of the series probably lies behind its early imitation by Vermont and was almost certainly a factor in its extensive counterfeiting. By 1789, the profusion of counterfeits ultimately caused the Connecticut State Assembly to put an end to the coinage—a victim of its own great popularity.

ACKNOWLEDGEMENTS

The author wishes to thank Louis Jordan and Raymond Williams for commenting on an earlier draft of this paper. Special thanks are due to Randy Clark and Philip Mossman for their indispensable assistance in providing data for the tables and for commenting on the text. All conclusions are the sole responsibility of the author.

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Acquisitions for 2006 in the American Numismatic Society Collection

PLATES 43–46

SEBASTIAN HEATH, ANDREW MEADOWS,
AND PETER VAN ALFEN

GREEK AND ROMAN PROVINCIAL ACQUISITIONS

In 2006, the Greek department grew by 493 objects, the greatest proportion of which were gifts from our members and Trustees. Several hundred fourth-century Athenian owls (accession numbers 2006.12.1–316), which will be published by Lisa Anderson and Peter van Alfen in *AJN* 20 were acquired by the cabinet. Ten Roman provincial issues were donated by David Simpson (2006.21.1–10), and David Vagi gave a single Athenian tetradrachm (2006.14.1) that had likely been circulated in the Near East, as it bears a test cut on the reverse. Dr. Arnold-Peter Weiss donated more items (2006.1.1–7) from a large bullion hoard that was published earlier by Peter van Alfen (2004–2005) as well as a substantial collection of Celtic coins (2006.19.1–66). We thank all of our donors for their continued generosity. In addition to these gifts, the Greek department purchased ninety-three coins mostly from the BCD Boiotia collection, sold by Classical Numismatic Group on January 10, 2006 (Triton IX), and from the BCD Peloponnesian collection, sold by LHS Numismatics in Zürich on May 8–9, 2006. Specific information about each of the coins in this report can be found by accessing our online database at <http://www.numismatics.org/search>. We begin with a selection of our new Archaic, Classical, and Hellenistic acquisitions.

Coins acquired from the BCD Boiotian auction included a number of rare, unpublished, and possibly unique examples of fractional silver and bronze issues from the fifth and fourth centuries, which help to fill in lacunae in our already substantial Boiotian holdings.

*1. Boiotia, c. 475–450

Acc. number 2006.20.1

AR *tetartemorion*, 0.16 g

Obv.: Boiotian shield

Rev.: Wheel of four spokes in incuse square

Ref.: Triton IX, lot 5

*2. Boiotia, c. 338–300

Acc. number 2006.20.3

AE fraction, 14 mm, 2.13 g

Obv.: Boiotian shield

Rev.: Ornamented trident upward, with curved crossbar, BOIOTON upward on l., dolphin upward on r., N to lower r.

Ref.: Triton IX, lot 54

*3. Boiotia, c. 338–300

Acc. number 2006.20.4

AE fraction, 13 mm, 1.71 g

Obv.: Boiotian shield

Rev.: Ornamented trident upward with curved crossbar; dolphin upward on l., BOIOTON downward on r.

Ref.: Triton IX, lot 59

*4. Akraiphion, c. 475–450

Acc. number 2006.20.5

AR hemiobol, 0.29 g

Obv.: Half Boiotian shield

Rev.: A in shallow incuse square

Ref.: *Traité* III 273, pl. CCII, 13

*5. Orchomenos, c. 475–425

Acc. number 2006.20.6

AR hemiobol, 0.34 g

Obv.: Half wheat grain, sprouting end upward; E-P across upper field

Rev.: Shallow skew pattern incuse

Ref.: Triton IX, lot 204

***6. Orchomenos, 395–364**

Acc. number 2006.20.7

AR *tritartemorion*, 0.65 g*Obv.*: Three wheat grains in a row, sprouting ends upward; below: E-P*Rev.*: Star of seven rays with central hub; E-P flanking one ray*Ref.*: Triton IX, lot 219***7. Plataiai, 387–372**

Acc. number 2006.20.8

AR obol, 0.80 g

Obv.: Boiotian shield*Rev.*: Head of Hera to r.; behind: PLA*Ref.*: *SNG Cop* 214***8. Plataiai, 387–372**

Acc. number 2006.20.9

AE fraction, 22 mm, 6.81 g

Obv.: Boiotian shield*Rev.*: PLA in concave incuse*Ref.*: *BMC* 3, pl. IX, 5

A full concordance of ANS accession numbers and CNG lot numbers follows.

2006.20.1	Lot 5
2006.20.2	Lot 13
2006.20.3	Lot 54
2006.20.4	Lot 59
2006.20.5	Lot 148
2006.20.6	Lot 204
2006.20.7	Lot 219
2006.20.8	Lot 241
2006.20.9	Lot 242
2006.20.10	Lot 312
2006.20.11	Lot 312
2006.20.12	Lot 312

Highlights from the BCD Peloponnesian purchases included:

***9. Epidaurus, late 4th–early 3rd century BC**

Acc. number 2006.31.5

AR obol, 0.73 g, 9h

Obv.: Laureate head of Apollo l.*Rev.*: E within laurel wreath tied at the bottom

Ref: LHS 96, lot 1223

And three apparently unpublished silver fractional coins of the fifth century:

*10. Cleonae, 5th century BC

Acc. number 2006.31.6

AR *tetartemorion*, 0.22 g, 10h

Obv.: Lion's head with open jaws r.

Rev.: K with curved arms in the right half of an incuse square

Ref: LHS 96, lot 1320

*11. Cleitor, 5th century BC

Acc. number 2006.31.7

AR hemidrachm, 0.29 g, 5h

Obv.: Forepart of bridled horse l.

Rev.: E within shallow circular incuse

Ref: LHS 96, lot 1418

*12. Psophis, 5th century BC

Acc. number 2006.31.8

AR obol, 1.00 g, 9h

Obv.: The Keryneian Hind, with horns, standing r.

Rev.: Fish swimming l. within incuse square.

Ref: LHS 96, lot 1675

Of this last city, the ANS was also able to acquire three of the four known bronze types of the fourth century, all hitherto unrepresented in the collection (lots 1683, 1684, 1687), 2006.31.9–11, as well as a bronze issue of the city as member of the Achaean League (lot. 1688) 2006.31.12.

Of the eighty coins acquired by the Society from the BCD collection, sixty-seven were struck during the period of Roman control of Greece (2006.31.14–80). These are all small-denomination bronzes and all are described and photographed in the auction catalog, so only a few additional comments will be made here.

The mints represented in the new acquisitions are Gytheion, Mothone, Phlius, Psophis, Sicyon, and Tegea. Most are of types new to the ANS collection and many are paralleled in Imhoof-Blumer and Gardner's *Numismatic Commentary on Pausanias* (1887). Within the group, a hemiassarion of Geta with Artemis on the reverse from Sicyon (2006.31.34) and two examples of an assarion of Geta from Mothone (2006.31.44, 2006.31.48), showing Tyche with cornucopiae and rudder on the reverse, stand out as particularly rare or apparently unpublished.

Even though this small selection of coins from these few cities is by no means representative, it nonetheless accurately reflects the burst of minting activity that

took place in the Peloponnesus under the Severan dynasty of the early third century AD (Grunauer von Hoerschelmann 1983). Of the sixty-seven coins, only the three from Sicyon struck under Nero do not name a member of that imperial family. A fuller discussion of this phenomenon will be available once Grunauer von Hoerschelmann's full study is published, but a tentative explanation may lie in the need to pay exceptional imperial tax assessments. Regardless of specifics, it seems likely that such a punctual increase in minting by cities in the region, some of which had never previously appeared as issuing cities during Roman rule and would never appear as such again, needs to be explained by external factors. While they do not add additional information to this discussion, the new ANS acquisitions can help illustrate the point.

Accession numbers 2006.31.15 through 21 are coins of Phlius. This city in the northeast Peloponnesus issued coins from the late Archaic period into the second century BC, with these last being struck under the Achaean League (Gardner 1887; MacIsaac 1988). There are then no issues until the Severan period, when coins are struck for Septimius Severus, Julia Domna, Geta Caesar, Caracalla as Caesar, and Caracalla as Emperor. The Severan issues are rare, as indicated by the fact that our new eight coins are the first of this type to come into the ANS collection. The historical record for Roman Phlius is sparse, with no sources illuminating its imperial history after Pausanias's visit to the city in the second century AD (Meyers 1941). One cannot therefore look to the city's recorded history to explain the appearance of these coins. Likewise, the occasional archaeological work conducted at Phlius, consisting of both excavation and a campaign of surface collection (Alcock 1991), does not illuminate the circumstances of issue other than to confirm that an urban settlement of second rank at best did exist in the third century. Nos. 2006.31.22–34 are issues of Sicyon. Of these, 2006.31.22–24 were struck in the name of Nero and are obviously to be associated with that emperor's visit to Greece in AD 67. Little is known about Roman Sicyon other than that it did not match the importance it had held in earlier Greek history. This again makes the sudden appearance of coins struck for the Severan dynasty noteworthy. This narrative of a lesser city striking coins under the Severans is repeated for Gytheion, Mothone, Psophis, and Tegea.

Of additional interest are the pieces for which information regarding source region is available. These are 2006.31.27 (Israel), 32 (Israel), 37 (Cilicia), 50 (Levant), 55 (purchased in Beirut), 56 (Levant), 61 (Israel), 71 (Tunisia), 73 (Levant), 74 (Levant), and 77 (Levant). The introductions to the LHS catalog also state that not all known findspots were included in the catalog (see unnumbered third page of the cataloger's introduction and unnumbered first page of BCD's introduction). All the findspots are for Severan-period coins, and these otherwise undocumented sources are made more plausible by the fact that Peloponnesian issues of this period are known to have circulated widely. They are published from secure archaeologi-

cal contexts in Corinth (Edwards 1933) as well as from Athens (Kroll and Walker 1993). Similarly, coins issued under Septimius Severus by the Greek cities Megara, Aegium, Pellene, Thuria, Gytheion, Heraea, Mantinaea, and Thelpusa appear in the third-century Eighth and Ninth Dura Europus hoards (Bellinger 1939). The Tunisian findspot of 2006.31.71 is remarkable, but the appearance of eastern coins in the western empire has been reported previously and is perhaps associated with military deployments (e.g., Weisser forthcoming).

A full concordance of ANS accession numbers and LHS 96 lot numbers follows.

2006.31.1	Lot 473	2006.31.32	Lot 368
2006.31.2	Lot 824	2006.31.33	Lot 370
2006.31.3	Lot 1117	2006.31.34	Lot 372
2006.31.4	Lot 1222	2006.31.35	Lot 804
2006.31.5	Lot 1223	2006.31.36	Lot 805
2006.31.6	Lot 1320	2006.31.37	Lot 806
2006.31.7	Lot 1418	2006.31.38	Lot 807
2006.31.8	Lot 1675	2006.31.39	Lot 808
2006.31.9	Lot 1683	2006.31.40	Lot 810
2006.31.10	Lot 1684	2006.31.41	Lot 811.1
2006.31.11	Lot 1687	2006.31.42	Lot 811.2
2006.31.12	Lot 1688	2006.31.43	Lot 811.3
2006.31.13	Lot 1772	2006.31.44	Lot 812
2006.31.14	Lot 149	2006.31.45	Lot 813.1
2006.31.15	Lot 152	2006.31.46	Lot 813.2
2006.31.16	Lot 153.1	2006.31.47	Lot 813.3
2006.31.17	Lot 153.2	2006.31.48	Lot 813.4
2006.31.18	Lot 153.3	2006.31.49	Lot 963
2006.31.19	Lot 153.4	2006.31.50	Lot 964
2006.31.20	Lot 153.5	2006.31.51	Lot 965
2006.31.21	Lot 153.6	2006.31.52	Lot 967
2006.31.22	Lot 354.1	2006.31.53	Lot 968
2006.31.23	Lot 354.2	2006.31.54	Lot 969.1
2006.31.24	Lot 354.2	2006.31.55	Lot 969.2
2006.31.25	Lot 356	2006.31.56	Lot 969.3
2006.31.26	Lot 357	2006.31.57	Lot 969.4
2006.31.27	Lot 358	2006.31.58	Lot 969.5
2006.31.28	Lot 359	2006.31.59	Lot 969.6
2006.31.29	Lot 362	2006.31.60	Lot 971
2006.31.30	Lot 363	2006.31.61	Lot 972
2006.31.31	Lot 364	2006.31.62	Lot 973

2006.31.63 Lot 974.1	2006.31.72 Lot 978.4
2006.31.64 Lot 974.2	2006.31.73 Lot 980
2006.31.65 Lot 974.3	2006.31.74 Lot 982
2006.31.66 Lot 974.4	2006.31.75 Lot 984
2006.31.67 Lot 974.5	2006.31.76 Lot 985
2006.31.68 Lot 977	2006.31.77 Lot 1691.1
2006.31.69 Lot 978.1	2006.31.78 Lot 1691.2
2006.31.70 Lot 978.2	2006.31.79 Lot 1753
2006.31.71 Lot 978.3	2006.31.80 Lot 1755

A fine group of Roman provincial coins was also contributed by David Simpson. Among these is a very nice example of Augustus's "CA" coinage (2006.21.9; Plate 46, no. 13). The AE42 issued by the Ionian League under Antoninus Pius (2006.21.5; Plate 46, no. 14) is an exceptional addition to the ANS collection (Gillespie 1956, group 1, type 1). Likewise, a unique coin of Germe, struck for Marcus Aurelius with a reverse of a reclining Apollo (2006.21.4; Plate 46, no. 15), previously in the von Aulock collection (no. 1109), is very welcome (Ehling 2001, no. 109). Finally, an additional coin of the Roman province of Dacia, issued for Philip I and dated to year 2 of the provincial era, was added to the cabinet (2006.4.1). This complements the larger donation of these coins made in 2005 and discussed in the report on new acquisitions found in *AJN* 18 (2006).

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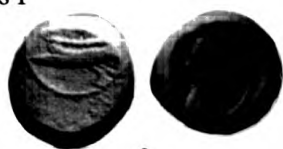
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Plates

SILVER

Before devaluation

Series I



2



6 (x 2.5)

Series II



25



27



Series III



210



380

Series IV.1



861



586



679

The Devaluation of Sidonian Silver Coinage

Plate 2

After devaluation

Series IV.2



1236



1245



1292



1405

Series IV.3



1534

The Devaluation of Sidonian Silver Coinage

Series IV.5



1789

Series IV.6



2023

BRONZE

Dated series



1470



1483



1509

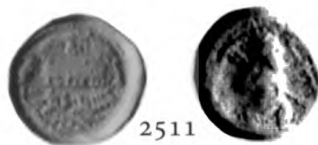
Unattributed series



2321



2384



2511



2601

The Devaluation of Sidonian Silver Coinage

Plate 4



The Stymphalos Hoard

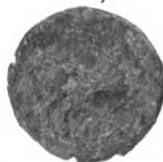
Coins from the fortifications



IV-4



IV-7



V-13



V-17



VIII-2



XIII-1



The Stymphalos Hoard

Plate 6

Obverse dies, Series 1



[1]



{2}

Obverse dies, Series 2



(1)



(2)*



{3}



{4}



(5)



{6}



(7)

Obverse dies, Series 3



{1}



{2}

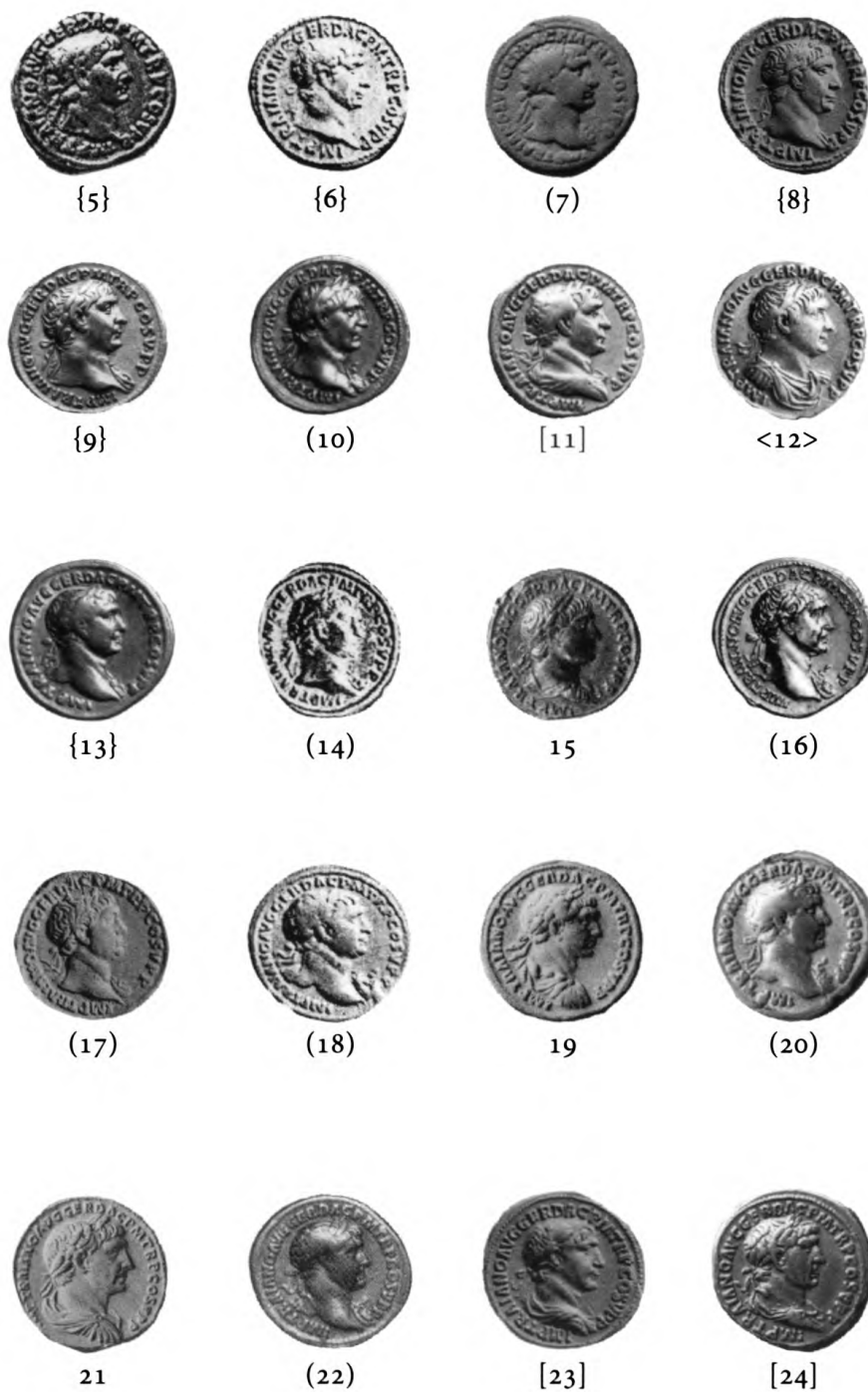


{3}



{4}

The Gold Coinage of Trajan Dated COS V



The Gold Coinage of Trajan Dated COS V

Plate 8



[25]



[26]



[27]



(28)



29



30



31



32



33



34



{35}



[36]



[37]



38*



(39)



40



41*



42



43



44

The Gold Coinage of Trajan Dated COS V



The Gold Coinage of Trajan Dated COS V

Plate 10

Obverse dies, Series 4



1



2



3*



4*



5



(6)



(7)



8*



9



10



11



12



13



14



(15)*



16*



17



18



19



20

The Gold Coinage of Trajan Dated COS V



The Gold Coinage of Trajan Dated COS V

Plate 12



41*



42



43*



44*



45



46



47



48*



49



50*



51



52*



53



54



55



56



57



58

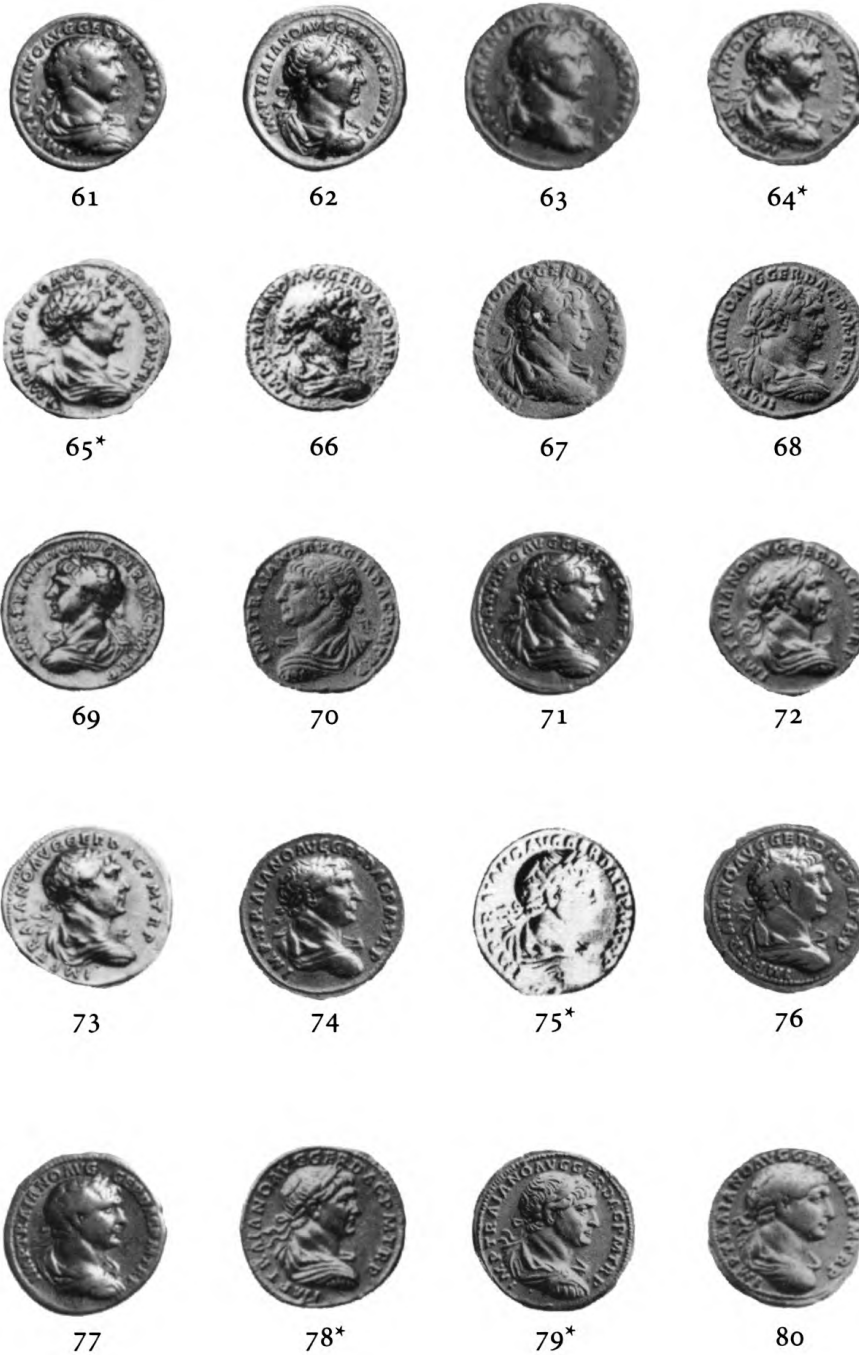


59



60

The Gold Coinage of Trajan Dated COS V



The Gold Coinage of Trajan Dated COS V

Plate 14



Reverse dies, Series 1



Reverse dies, Series 2



The Gold Coinage of Trajan Dated COS V

Reverse dies, Series 3



i.1



ii.1



iii.3



iii.2



iv.1



iv.2



iv.3



v.1



v.2



vi.1



vi.2



vi.3



vi.4



vi.5



vi.6



vi.7



vi.8



vi.9



vi.10



vi.11

The Gold Coinage of Trajan Dated COS V

Plate 16



iv.12



vi.13



vi.14



vi.15



vi.16



vii.1



vii.2



viii.1



ix.1



ix.2



ix.3



ix.4



ix.5



ix.6



ix.7



ix.8



ix.9



ix.10



ix.11



ix.12

The Gold Coinage of Trajan Dated COS V



ix.13



ix.14



ixb.1



ixb.2



x.1 = coin 3.X.1a



x.2 = coin 3.X.2a



xi.1



xi.2



xii.1



xii.2

Reverse dies, Series 4



i.1



i.2



i.3



i.4



ii.1



ii.2



ii.3



ii.4

The Gold Coinage of Trajan Dated COS V

Plate 18



ii.5



ii.6



iii.1



iii.2



iii.3



iv.1



iv.2



iv.3



iv.4



iv.5



iv.6



v.1



v.2



v.3



vi.1



vi.2



vii.1



vii.2



vii.3



vii.4

The Gold Coinage of Trajan Dated COS V



vii.5



vii.6



vii.7



vii.8



viii.1



viii.2



viii.3



viii.4



viii.5



viii.6



viii.7



viii.8



viii.9



viii.10



viii.11



viii.12



viii.13



viii.14



viii.15



viii.16

The Gold Coinage of Trajan Dated COS V

Plate 20



viii.17



viii.18



viii.19



ix.1



ix.2



ix.3



ix.4



ix.5



ix.6



ix.7



ix.8



ix.9



ix.10



ix.11



ix.12



ix.13



ix.14



ix.15



ix.16



ix.17

The Gold Coinage of Trajan Dated COS V



ix.18



ix.19



ix.20



ix.21



x.1



x.2



x.3



x.4



x.5



x.6



x.7



x.8



x.9



x.10



x.11



x.12



xi.1



xii.1



xii.2



xii.3

The Gold Coinage of Trajan Dated COS V

Plate 22



xii.4



xii.5



xii.6



xii.7



xii.8



xiii.1



xiii.2

The Gold Coinage of Trajan Dated COS V

OBVERSES

Groups 1-3



a57



a58



a59



a60



b21



b22



b23



b24



b25

Group C



c1



c10



c11



c12



c13



c14



c15



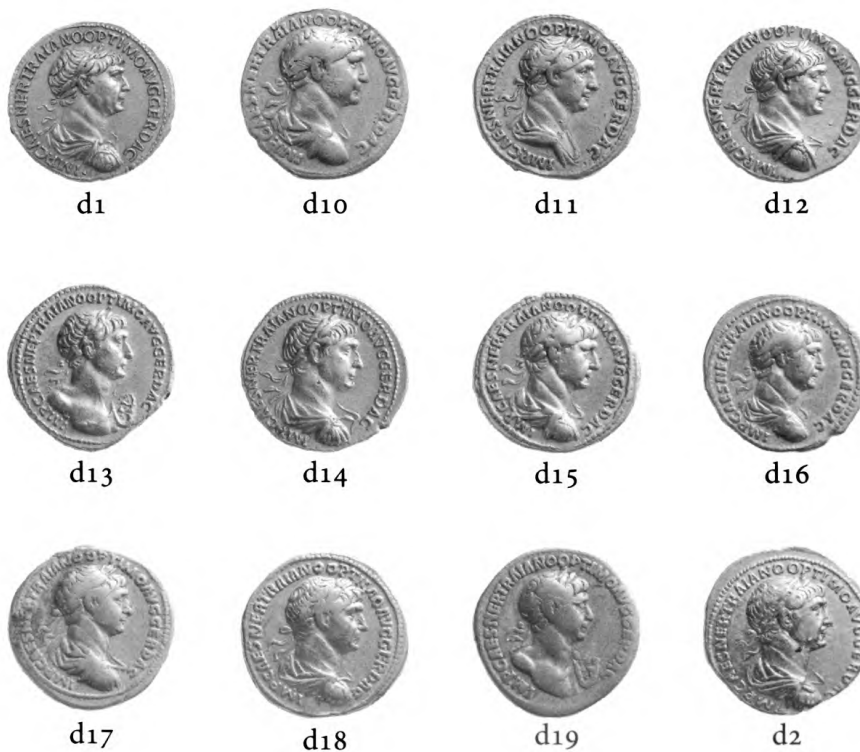
c2

Trajan's Gold Coinage, AD 112-117

Plate 24



Group D



Trajan's Gold Coinage, AD 112–117



d20



d21



d22



d23



d24



d25



d26



d27



d28



d29



d3



d30



d31



d32



d33



d34



d35



d36

Trajan's Gold Coinage, AD 112–117

Plate 26



d37



d38



d39



d4



d40



d41



d42



d43



d44



d45



d46



d47



d48



d49



d5



d50



d51



d52



d53



d54

Trajan's Gold Coinage, AD 112-117



d55



d56



d57



d58



d59



d6



d60



d61



d62



d63



d64



d65



d66



d67



d68



d69



d7



d70



d71



d72

Trajan's Gold Coinage, AD 112–117

Plate 28



d73



d74



d8



d9

Group E



e1



e10



e11



e12



e13



e14



e15



e16



e17



e18



e19



e2



e20



e21



e22



e23

Trajan's Gold Coinage, AD 112-117



e24



e25



e26



e27



e28



e29



e3



e30



e4



e5



e6



e7



e8



e9

Group F



f1



f10



f11



f12

Trajan's Gold Coinage, AD 112–117

Plate 30



f13



f14



f15



f16



f17



f18



f19



f2



f20



f21



f22



f23



f24



f25



f26



f27



f28



f29



f3



f30

Trajan's Gold Coinage, AD 112-117



f31



f32



f33



f34



f35



f36



f37



f38



f39



f4



f40



f41



f42



f43



f44



f45



f5



f6



f7



f8

Trajan's Gold Coinage, AD 112-117

Plate 32



f9

REVERSES

Groups 1-3



BE11



BE12



C5



FR3



FR4



J11



P8



S10

Group C



BE1



BE2



BE3



FR1



FR2



IMP1



J1



J2

Trajan's Gold Coinage, AD 112-117



J3



J4



P1



P2



RP1

Group D



BE1



BE11



BE12



BE13



BE14



BE2



BE3



BE4



BE5



BE6



BE7

Trajan's Gold Coinage, AD 112-117

Plate 34



BE8



BE9



FR1



FR10



FR11



FR12



FR13



FR14



FR15



FR16



FR17



FR18



FR19



FR2



FR20



FR21



FR22



FR23



FR3



FR4

Trajan's Gold Coinage, AD 112-117



FR5



FR6



FR7



FR8



FR9



J1



J10



J11



J2



J3



J4



J5



J6



J7



j8



j9



P1



PV1



RA1

Trajan's Gold Coinage, AD 112-117

Plate 38



S12



S13



S14



S15



S16



S17



S18



S19



S2



S20



S21



S22



S23



S3



S4



S5



S6



S7



S8



S9

Trajan's Gold Coinage, AD 112–117

Forgeries



Forgery 1



Forgery 2



Trajan's Gold Coinage, AD 112–117



1



2



3



The Liberty Reverse Type of the Connecticut Coppers

Plate 40



4



5 (0.75x)



6



7



8



The Liberty Reverse Type of the Connecticut Coppers



The Liberty Reverse Type of the Connecticut Coppers

Plate 42



The Liberty Reverse Type of the Connecticut Coppers

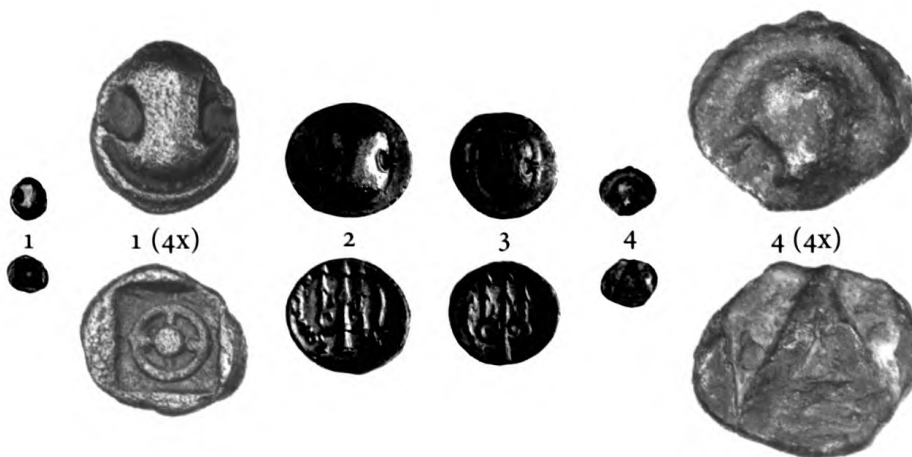


26



27

The Liberty Reverse Type of the Connecticut Coppers

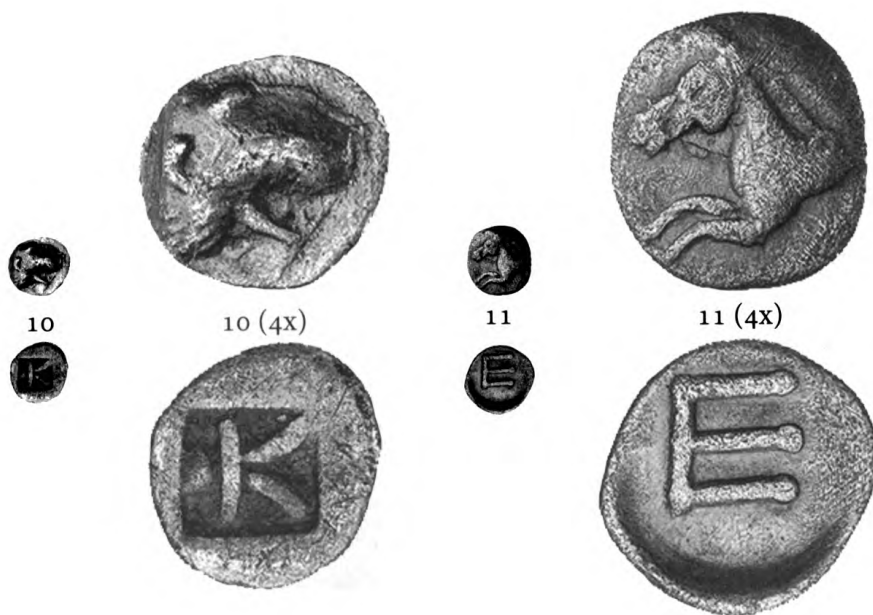
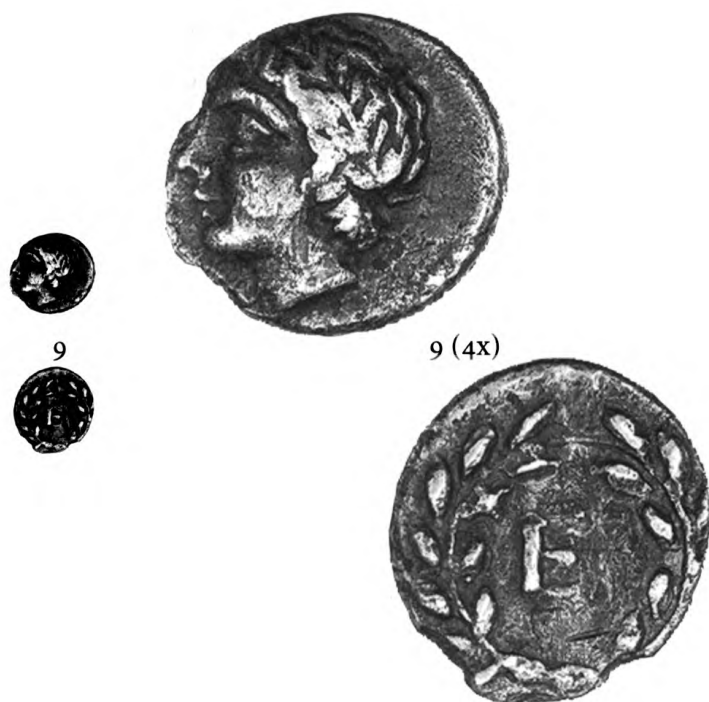


Acquisitions for 2006

Plate 44



Acquisitions for 2006



Acquisitions for 2006

Plate 36



RA2



RA3



S1



SA1



SA2



SA3



SA4



SA5



V1



V2

Group E



PC1



PC10



PC11



PC12



PC13



PC2



PC3



PC4

Trajan's Gold Coinage, AD 112-117



PC5



PC6



PC7



PC8



PC9



PR1



R1



R2



R3



r4



S1



S2



V1

Group F



H1



S1



S10



S11

Trajan's Gold Coinage, AD 112–117

Plate 38



S12



S13



S14



S15



S16



S17



S18



S19



S2



S20



S21



S22



S23



S3



S4



S5



S6



S7



S8



S9

Trajan's Gold Coinage, AD 112–117

Forgeries



Forgery 1



Forgery 2



Trajan's Gold Coinage, AD 112-117



1



2



3



The Liberty Reverse Type of the Connecticut Coppers

Plate 40



4



5 (0.75x)



6



7



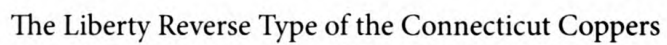
8



The Liberty Reverse Type of the Connecticut Coppers



The Liberty Reverse Type of the Connecticut Coppers



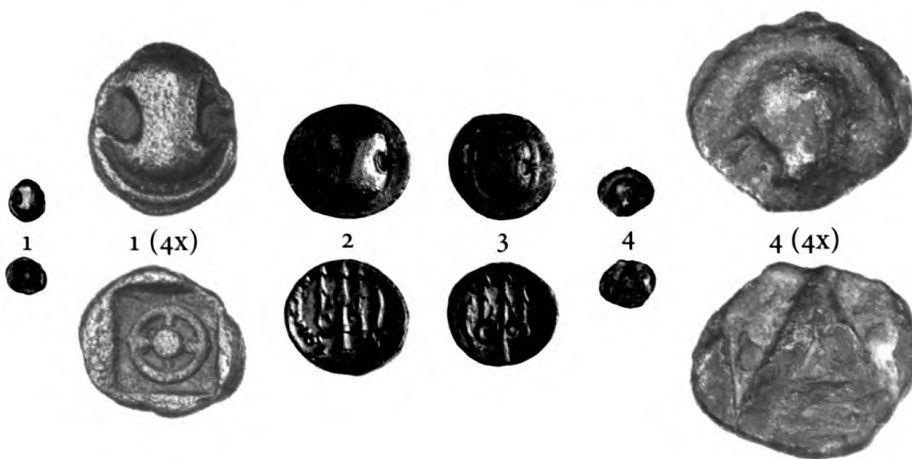


26



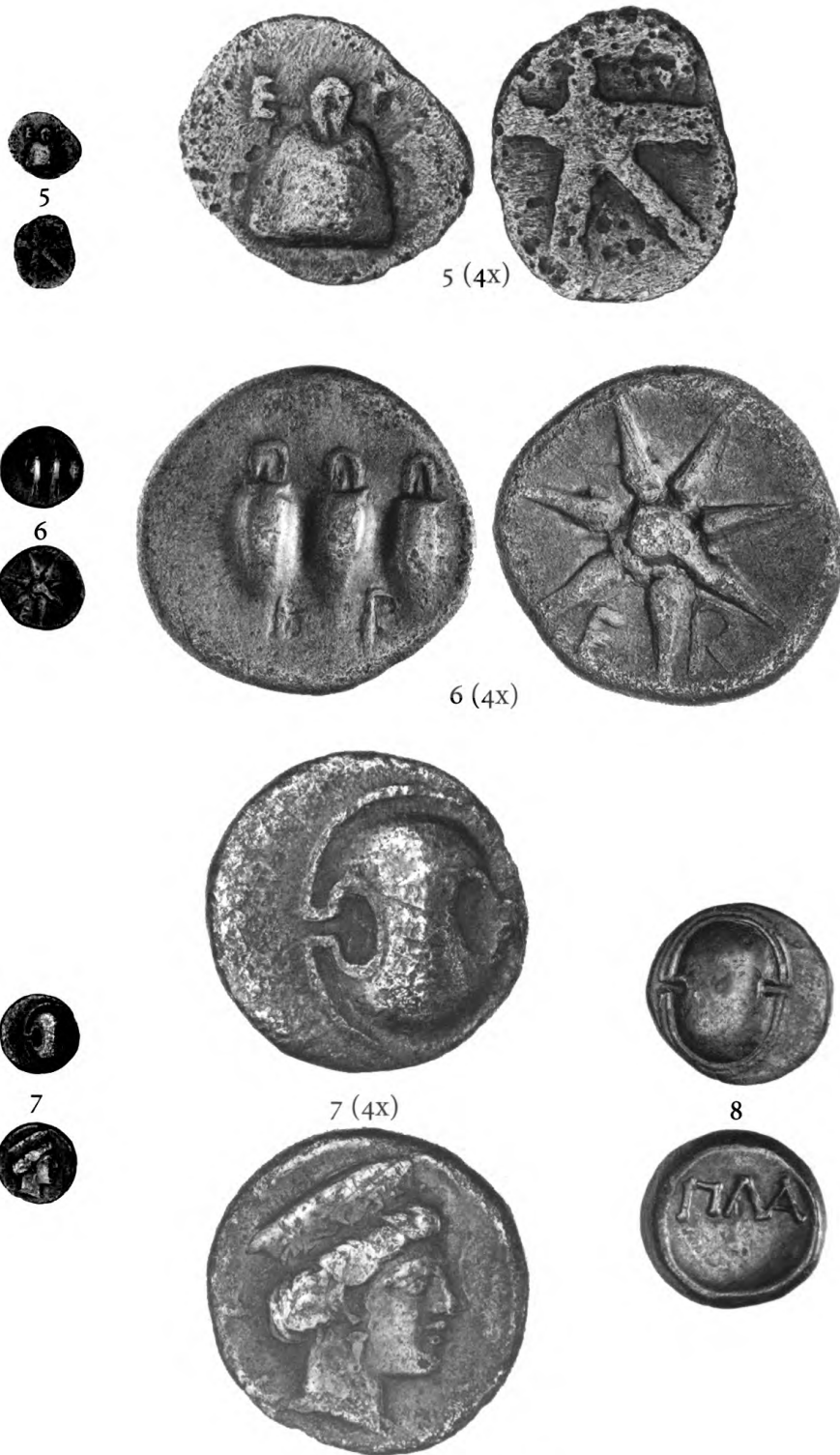
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The Liberty Reverse Type of the Connecticut Coppers

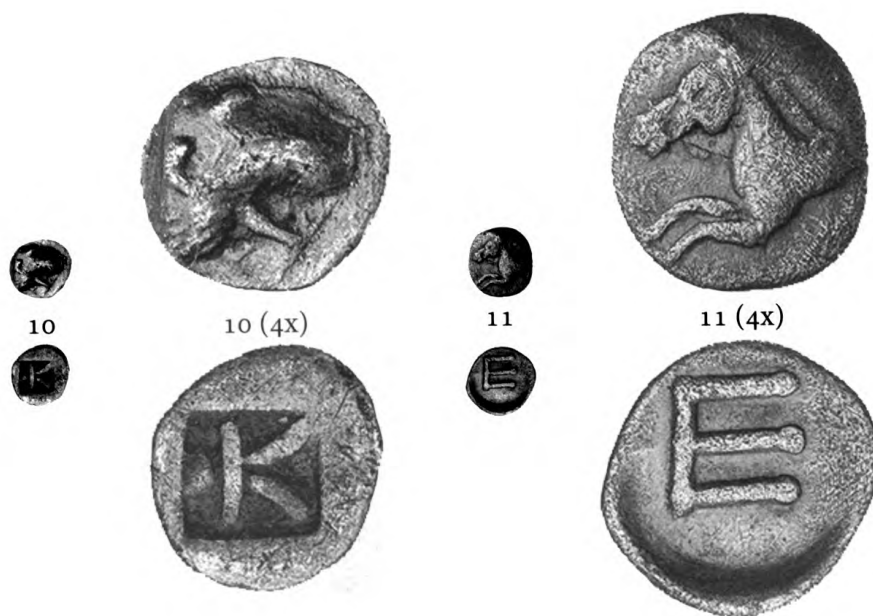
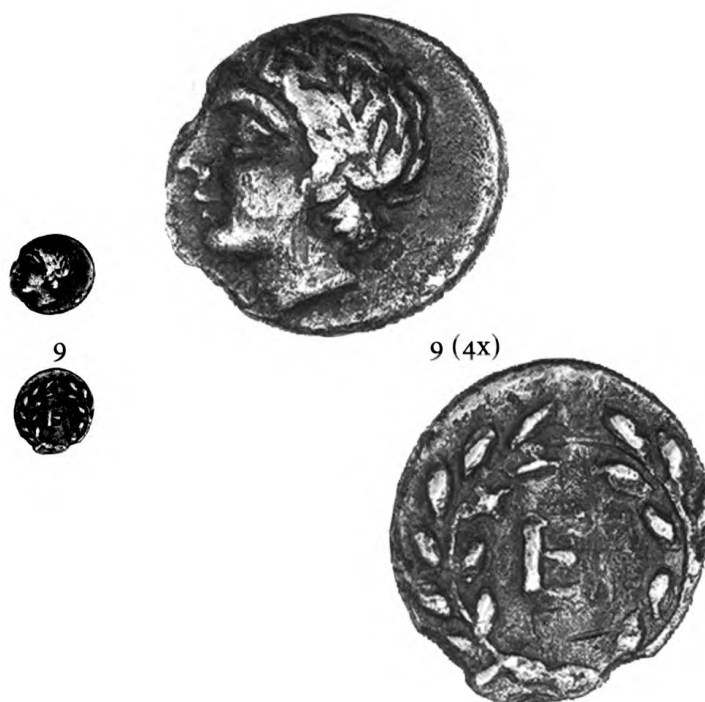


Acquisitions for 2006

Plate 44



Acquisitions for 2006



Acquisitions for 2006

Plate 46



12



12 (4x)



13



14



15



Acquisitions for 2006



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